AUDIO-VISUAL Instruction

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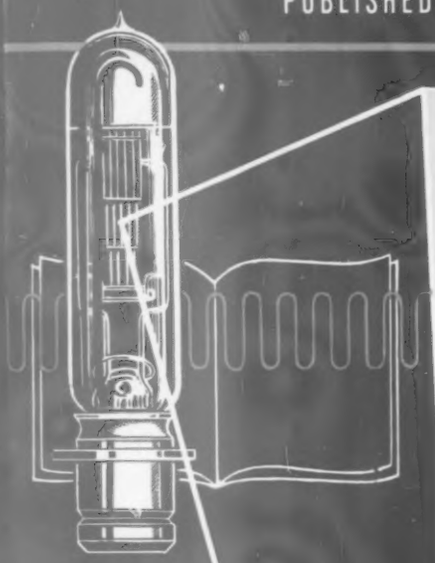

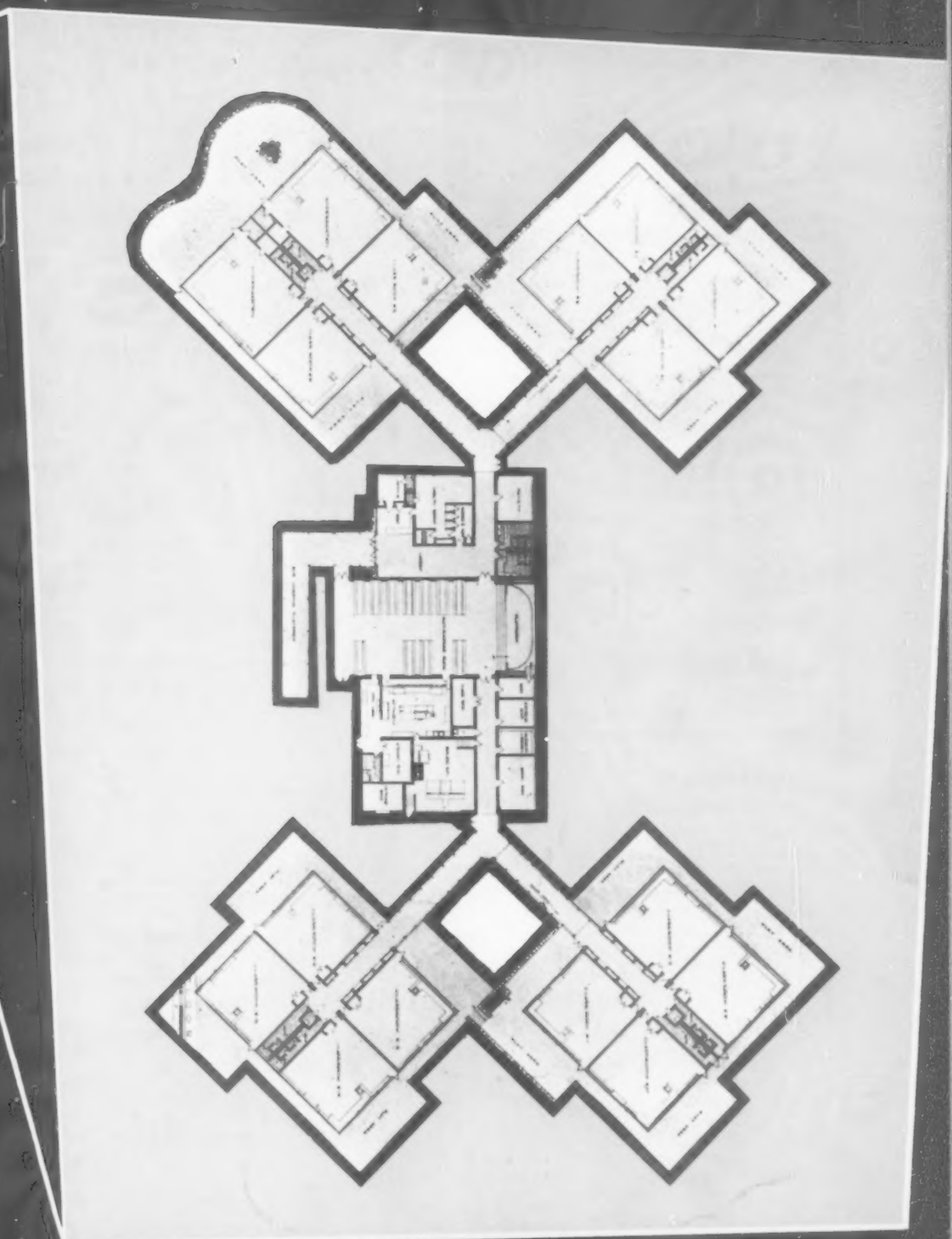

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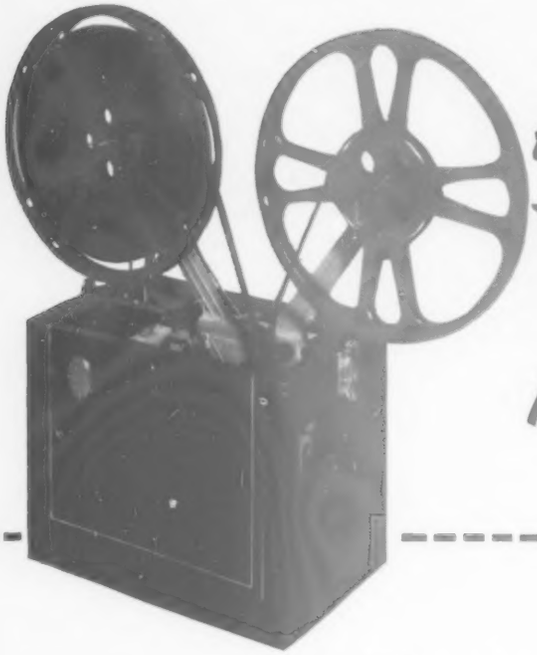

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. . . conducted by the Loyal Order of Moose

TEST RESULTS	VICTOR	PROJECTOR A	PROJECTOR B
BEST SOUND	1	3	2
BEST PICTURE	1	3	2
FILMS CHANGED	1	3	2
LAMPS CHANGED	1	3	2
LENSES CHANGED	1	3	2
COOLEST RUNNING	1	3	2
MECHANICAL RESONANCE	2	3	1

Victor 16mm projectors recently won a test that *really* was a test. No experts involved — no laboratory equipment, either. And Victor didn't pay to have the test made — didn't even *know* about it.

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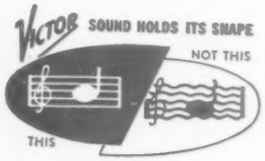

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Volume 1 Issue No. 6 November 1956

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THE *Editor's Notebook*

Coming in December

Next month the author of a book on educational leadership writes on the audio-visual specialist in that role. He is C. A. Weber of the University of Connecticut who with his wife, Mary E. Weber, wrote *Fundamentals of Educational Leadership.* W. R. Fulton of the University of Oklahoma tackles the problem of how we can develop our teachers into competent users and selectors of AV materials. In the "how to do it" department, Madison Devlin of the City College of San Francisco gives a step-by-step description of how to put recordings on tape and thereby save irreplaceable originals; Phil Lewis of Chicago Teachers College tells how to make (inexpensively) a television camera rehearsal chain; and Herbert C. Rosenthal, director of Graphics Institute, New York, shows how graphics can be put to work in the classroom.

About the Authors

Kenneth L. Bowers is mass communications advisor to the U. S. Government in Chile. He has been a teacher of English, math, and music appreciation and until recently was director of the audio-visual center at West Chester (Pa.) State Teachers College. He has served on the DAVI Buildings and Equipment Committee.

A member of the New York architectural firm of Eggers and Higgins, **C. Gates Beckwith** has for many years worked in close harmony with DAVI's Building and Equipment Committee. He was instrumental in developing the self-contained secondary classroom on permanent exhibit at New York University and the model elementary classroom (see page 173) introduced at the National School Building Conference in Chicago in July 1955.

Charles A. Norford and **Horace C. Hartsell** are both located at the Michigan State University. Dr. Hartsell who is associate professor of audio-visual education is a former public school teacher and superintendent. He is AV consultant to the newly created Highway Traffic Safety Center at Michigan State. Mr. Norford is associate professor in the College of Education and head of the on-campus services for the audio-visual center.

Manager of school activities for the Minneapolis-Honeywell Regulator Company, **Zephyrin A. Marsh** is a strong supporter of organizations to bring educators and industry together. He is currently president of the Association of Exhibitors of the NEA. He helped to organize the School Facilities Council and served as its first chairman.

Robert B. Newman is associate professor of architecture at Massachusetts Institute of Technology and vice president of Bolt Beranek and Newman Inc., consultants in acoustics. After earning two degrees in physics from the University of Texas he worked in acoustics research for RCA and other organizations. He has a masters degree in architecture from MIT.

Andrena Crockett Briney is a classroom teacher in the Middle Tennessee State College Training School and president of the classroom teachers department of the Tennessee Education Association. Mrs. Briney, who says she has taught school as long as she can remember, is married to a Murfreesboro businessman and has one son, a seventh grader.

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The Cover . . . Courtesy American Association of School Administrators (1956 School Building Film strip).

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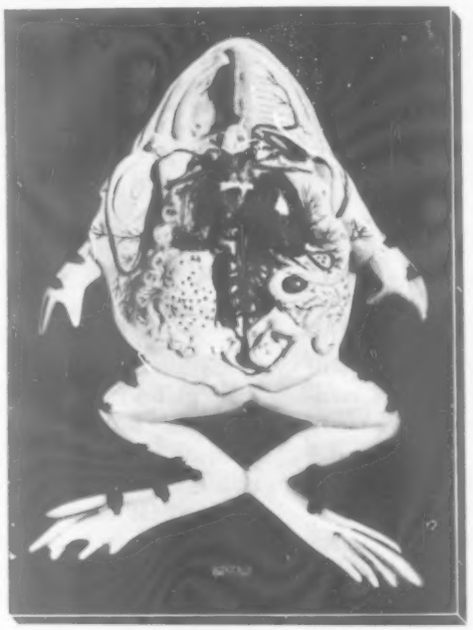

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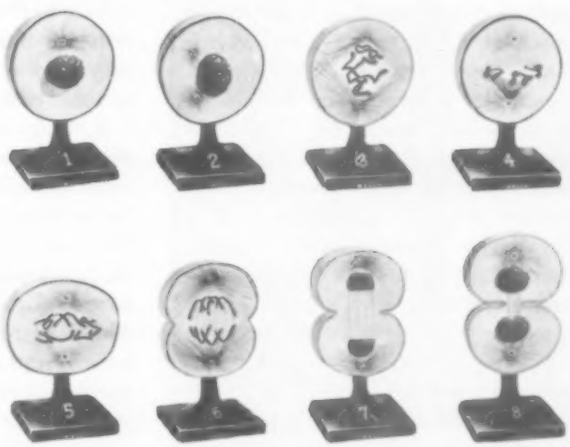

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DUE TO A LACK OF PHOTOGRAPHIC CONTRAST BETWEEN TEXT AND BACKGROUND, PAGES 173 AND 177 DID NOT REPRODUCE WELL.

building for better education

by
Kenneth L. Bowers

Smaller windows can reduce construction cost by one third. They make building easier to heat; facilitate light control.

EVER SINCE MAN SETTLED down under roof, he has been at the mercy of his buildings. What he sees, how he lives, looks, thinks—even how he dies—are overwhelmingly affected by the structures he designs and builds."

Does this observation from *Time* magazine (cover article July 2) apply to our school buildings? Are school teachers and their students at the mercy of those who design schools? There is evidence that such is the case.

Whether a given school building is good or bad depends often upon what kind of education it is supposed to house. If regimentation, indoctrination, and memorization are the aims, then desks bolted to the floor of a shelter which keeps out inclement weather is probably adequate. The goals of American schools today, however, cannot be met by such a narrow view of education. And as the school building may restrict and influence the kind of education going on within it, conversely, our dynamic philosophy of education dictates a functional school building which makes our education as complete as our present knowledge permits.

There are a number of reasons why education today is a different activity from what it was formerly. Teachers have problems unknown and unforeseen a generation or more ago. Because more children stay in school longer, students with a wide span of abilities are enrolled in every grade. In the upper grades, this means a variety of interests, and new subjects added to the program.

More facts are known in every field of human knowledge which means thicker textbooks, more concepts to be learned. The approach of still greater leisure in a civilization turning toward automation throws many old ideas out of date. Drop-outs and resulting juvenile delinquency cause increasing concern in some localities. These and other problems indicate that our educational system cannot afford to be anachronistic.

Of course enlightened schoolhouse planning will not solve all educational problems. But it will help. And where schoolroom design can contribute to better learning, school planners are remiss in their duties when they allow out-of-date schools to hamper the educational program.

Recently the writer sent a questionnaire to approximately 1000 architects and educators. The latter were audio-visual specialists, administrators, and curriculum experts. Included among the architects were award winners for excellence in school design. All of the 48 states were represented in the response which comprised about 70 percent of the 1000 questionnaires sent.

Opinion, Not Statistics

What the questionnaire revealed is the basis for this discussion. It should be understood that this is a reflection of the present opinion of the educators polled; it is not offered as statistics. Further, the respondents were asked to consider their experience in respect to elementary classrooms; presumably secondary schoolrooms would require similar facilities.

The questionnaire revealed three facilities considered essential to the use of audio-visual aids: storage space for flat pictures, charts, maps, and globes; darkening provisions adequate for motion picture and opaque projection; and electrical utility outlets sufficient to eliminate the need for extension cords.

Storage space need not be highly specialized, but at least two types should be provided—filing cabinets or drawers which will accommodate flat pictures of at least 11 by 14 inches; and shelf or cabinet space for three dimensional aids. Cabinets of approximately 24 by 24 by 30 inches would be adequate for most needs of this kind.

In some schools, storage space is built in the classroom or in closets. In other instances, movable cabinets have been provided. Either is satisfactory. Teachers report that they prefer storage space near waist height to eliminate stooping and reaching. This of course limits the amount.

The problem of light control is probably the most serious one facing the AV program. Audio-visual equipment manufacturers are trying to contribute to its solution by improving the quality of projection and projection screens. It is generally the experience of teachers and AV specialists, however, that no present combination of projector and screens is satisfactory without some form of room darkening.

The methods favored are plastic drapery on traverse tracks and full-closure venetian blinds. Plastic draperies can be fire resistant, easily

operated, easily cleaned, long lasting, esthetically attractive, and opaque. They will also permit ventilation while the room is darkened if they are mounted at least 18 inches inside the windows and cut to extend no closer than 18 inches from the floor.

Full-closure venetian blinds are steadily gaining in favor. Now manufactured by several companies, they offer the combined advantages of regular venetian blinds and opaque draperies.

Other methods include dark shades, cloth draperies, and shutters of various types.

Whatever the method, the control of light is an essential factor in schoolroom construction. The wide use of glass block and window walls has aggravated this problem. Audio-visual directors relate instances where students and teachers suffer from eye-strain and headache from the uncontrolled glare. Ventilation was said to be such a problem in one school that classes were held in the basement to escape the heat built up by sunshine on glass areas.

In some areas school administrators are reversing the "glass" trend to build classrooms with "vision strip" windows, walls of solid construction, and electric lighting. It is claimed that this construction is more economical; that classrooms with smaller windows are easier to heat in cold weather and to keep cool in hot weather. In Northern areas, it has been pointed out, electric lights must be used a large part of the school year regardless of window area.

Two Outlets Essential

Two electrical utility outlets are regarded as the absolute minimum for a classroom. The outlet at the center rear serves for most projectors. The outlet at the center front is used for record players, tape recorders, overhead projectors, radios, and similar aids. Many classrooms are equipped with as many as six separate locations for electrical outlets. Additional plug-ins are useful, especially when a counter is included with sink and cooking facilities.

There are many uses for electrical devices besides those mentioned above—an aquarium which needs heat or lighting, Christmas trees, science experiments, stand or table lamps in a reading corner, nurses and janitor equipment.

Probably the ideal classroom arrangement is the continuous electrical strip which allows plugging in at any point on the perimeter of the room.

In addition to the three essential classroom facilities discussed above, educators and architects agree that there are several others which are highly desirable. The distinction between "essential" and "desirable" is an arbitrary one, and many will consider some of the facilities listed as "desirable" to be as essential as those in the other category. The distinction here is based on an expression of opinion by more than 700 educators and architects.

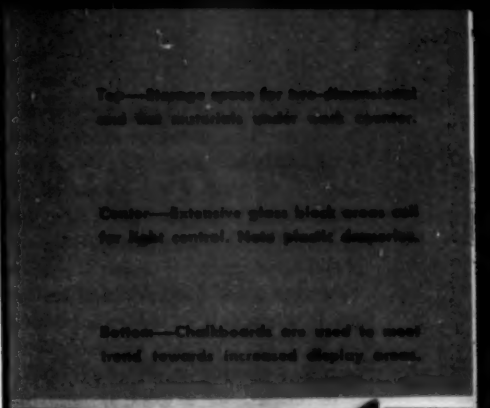
Acoustical treatment and a source of supplementary ventilation independent of room darkening facilities are highly desirable. Both are discussed at length elsewhere in these pages.

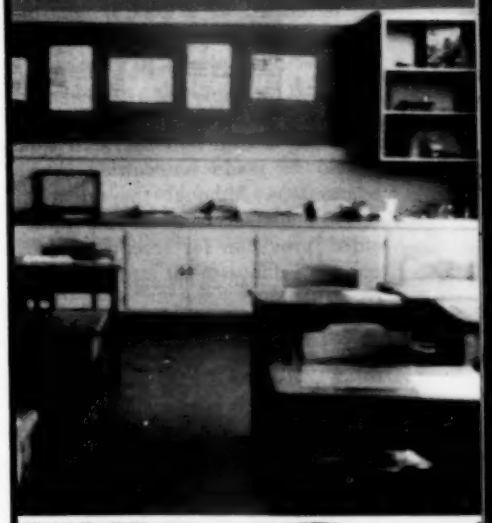
Desirable (but not essential) storage room includes space for recordings, the largest of which are commonly 12-inch disks. These should be stored vertically in albums. A shelf 14 inches deep and 14 inches high would accommodate them conveniently. In practice the shelf is frequently provided with a door or cover to keep out chalk dust and dirt.

Slides and filmstrips do not require specialized storage area, but storage space such as drawers or a cabinet is desirable.

Nor is specialized storage space needed for opaque, slide, and filmstrip projectors, although space of some kind should be provided. In some cases storage may be only between classes or overnight, but it is considered important by a great many educators. The largest of these projectors, the opaque, would require a space approximately a cube two feet on each edge. Portable record players could also be stored in this space.

There should be areas for both two- and three-dimensional displays in the classroom. As teaching becomes less formal and traditional, the trend is toward greater bulletin-board area and less chalkboard. Some classrooms are equipped with bulletin-board display surfaces on nearly all walls except for about 16 linear





feet which is reserved for chalkboard. The latter area is often surrounded by bulletin-board space on three sides. Some walls are constructed of homosote or wood, which can be used as display areas without any special treatment.

Recommended for television reception is a conduit of adequate width leading from the front of each classroom to a central point, which could be developed as a central control, and also to the roof, where an antenna would be placed. In some areas, television is available without exterior antennas, but for the best reception in a large building, provision should be made for outside aerial connections. Although the extent of classroom television is still undecided, provision for reception is an economical investment for new school construction.

If the conduit is put in when the school is built, the necessary wiring for TV can be pulled through economically at any later date.

In planning the entire school plant there are some principles which are generally agreed upon as essential or desirable. Primarily in connection with the elementary school, it is standard practice to keep chalkboard area near the eye level and reach of the children.

One controversial issue has been whether projected aids should be used in the classroom or in a special place, such as the auditorium or multipurpose room. Many AV specialists feel that there is still a need for an "audio-visual room" where one or more classes can meet to view projected materials. A large majority of educators agree however, that regardless of whether an "audio-visual room" is available in the school or not, it is essential that all classrooms be equipped for audio-visual use.

Equipped for "projection" means, essentially, provisions for light control, adequate electrical outlets, and the availability of a suitable projector and projection screen. This point of view indicates that most educators are ready to accept the use of projected aids as integral parts of the curriculum.

In planning the school building a central storage area for audio-visual equipment should be included. The size of the space depends on the number of classrooms to be served. The main thing is to make it adequate for motion picture and opaque projectors, rolling projection carts, and other large equipment. In larger buildings consideration should be given to storage facilities on each floor.

Advantageous but not essential are display areas in the corridors, where information or objects of general interest can be exhibited. The important thing here is that they should be at a height where they can be seen by children and should be well lighted by electric light.

The size of the audio-visual center will depend on the size of the school and whether there exists in the county or city a center to which the school has access. If the latter is true, then centers in the smaller schools will be of a supplementary nature. Catalogs, preview facilities, and order forms would be among the items included. In larger school systems, a centrally-located AV center takes over many of the administrative activities. Usually a coordinator in each building facilitates the program, however. Space should be made available to him where teachers can be served with information about selection and use of aids.

If a center of this type is located near the school library, the various instructional materials are kept conveniently close together.

In larger schools, in addition to space for administration of the AV program, the center should include storage for equipment and materials, preview and pre-hear facilities, and the necessary space and equipment for the production of some materials. Photographic, graphic, and recording equipment might be among the facilities included. The DAVI booklet, *Audio-Visual Instructional Materials Center*, offers complete details on this subject.

Display areas lose value if too high for children to see contents. Note top shelf.

In many schools, the intercommunications system is used only as an administrative gadget for making announcements, sending for students, and otherwise interrupting class work. In other cases, it is feared as an eavesdropping device used for undetected listening to what goes on in the classroom. To eliminate some of these abuses and the criticism they arouse, the intercommunications system should be a two-way sound system equipped with a control switch in each classroom.

An intercommunications system of this type in connection with a record player, radio, tape recorder, and microphones has many educational uses which are largely neglected. Only the educational experiences which such a system offers to students justify its inclusion as a desirable audio-visual aid.

Facilities at a Glance

Essential Classroom Facilities

- Storage space for flat pictures, maps, charts, globes
- Darkening provisions adequate for motion picture and opaque projection
- Enough electrical utility outlets to eliminate need for extension cords

Desirable Classroom Facilities

- Acoustical treatment for optimum sound qualities
- Controlled supplementary ventilation independent of darkening facilities
- Storage space for recordings, slides, filmstrips
- Storage space for opaque, slide, and filmstrip projectors
- Locks for storage areas
- Chalkboards other than black
- Built-in areas for displays
- Provision for television reception

Essential Building Facilities

- Chalkboards and tackboards at various heights to accommodate children of different ages (elementary)
- All classrooms equipped for projection
- Separate storage for audio-visual treatment

Desirable Building Facilities

- Display area in corridors
- An audio-visual center
- Two-way intercommunication system with classroom control

MAVA in Ypsilanti

The fall conference of the Michigan Audio-Visual Association will take place at Western Michigan College, Ypsilanti, November 5-6. Keynoters will be Floyde E. Brooker, DAVI executive secretary, and James Bushong, superintendent of Grosse Pointe (Mich.) public schools. A presentation on the importance of light control and good projection will be made by Adrian TerLouw, educational consultant, Eastman Kodak Company. Members of the Program Committee are Ralph Peterson, Ford Lemler, Charles Worland, and Robert LeAnderson.

AVCAM Sellout

The Audio-Visual Coordinators Association of Minnesota reports brisk sales for its handbook published early last year. Selling at 35 cents per copy the first printing was exhausted in July. Out-of-state requests came from Florida, Michigan, and Wisconsin. An additional 2000 copies are now available.

Photo File Organized to Tell AV Story

THE AUDIO-VISUAL COMMISSION on Public Information has announced plans for the establishment of a national photographic file. The purpose of the file is to assemble and make available for publication in books and magazines photographs illustrating the use of audio-visual materials and equipment. Clyde K. Miller and Robert W. Wagner are co-chairmen of the project.

Dr. Miller, who will assemble and maintain the file, requests that everyone who has photos showing AV materials and equipment *in use* send him 8 x 10 glossy prints (or negatives, if possible). Since the photographs are for publication, signed releases from all persons pictured should be included. Each photo should also be identified as to source and audio-visual media portrayed. Photographs of equipment alone and stills from educational films are unsuitable. All photos should be addressed to Dr. Clyde K. Miller, Director, Division of Audio-Visual Education, State Office Building, Columbus, Ohio.

Dr. Wagner, of the Photography Department at Ohio State University, will have charge of making copies of negatives and glossies. These will be available to the public at $1.35 each for copy negatives and 80c per glossy.

The commission, which is composed of representatives of DAVI and eight other national organizations interested in the improvement of instruction through wider and better use of audio-visual methods and materials, recently elected the following officers: chairman, Charles F. Schuller; vice-chairman, Don G. Williams; secretary, Emily S. Jones. Serving with the officers on the Executive Committee are Floyde E. Brooker, Harold E. Hill, William H. King, and Don White.

Financial Statement Explained

PRINTED BELOW is the financial statement of the Department of Audio-Visual Instruction, NEA, for the 1956 fiscal year. Three factors should be noted:

First, this statement covers only DAVI accounts, not funds provided by the NEA for operation of the Division of Audio-Visual Instructional Service. The national office has eight staff members, only one of which is carried on the budget. In additon to cash funds, NEA provides space, heat, equipment, and other facilities.

Second, the cash balance of $11,036.68 is deceptive. The true balance is nearer to that of last year. On the day the books closed (a) the bills for two issues of *Instructional Materials* were not yet in and (b) while we had most of the *AVCR* subscriptions for the year we still had to pay for four issues.

Third, DAVI is solvent. Yearbook sales this year paid off the funds advanced for its printing. *AVCR* is now operating in the black and AUDIO-VISUAL INSTRUCTION nearly so.

DAVI FINANCIAL STATEMENT, 1955-56

CREDIT BALANCE JUNE 1, 1955		$4,435.46
RECEIPTS JUNE 1, 1955-MAY 31, 1956		
Membership (includes receipts from such miscellaneous sources as rental of college folios, sale of membership lists, etc.)	$17,475.06	
Publication Sales (Yearbook, Building Bulletins, AV Communication Review, etc.)	13,009.71	
Advertising, AUDIO-VISUAL INSTRUCTION	5,686.88	
Exhibits and Convention Receipts	14,919.90	
Travel Reimbursements	307.50	
		51,399.05
DISBURSEMENTS JUNE 1, 1955-MAY 31, 1956		
Salaries	4,352.14	
Travel (not including travel to DAVI Conventions and Board meetings)	2,626.21	
Conventions (includes construction of scale model of classroom)	14,088.85	
Printing (AUDIO-VISUAL INSTRUCTION, *AV Communication Review.* Tape Supplement No. 4, Graduate Directory, reprints of Tape Catalog No. 3, promotional fliers	14,582.07	
General Operating (stationery and office supplies, telephone, postage, etc.)	8,500.56	
Subscriptions to *Educational Screen*	648.00	
		44,797.83
CREDIT BALANCE MAY 31, 1956		11,036.68

Europe in '58?

Through the NEA Travel Service, members of DAVI, their families and friends, have the opportunity for a European tour planned especially for them in 1958.

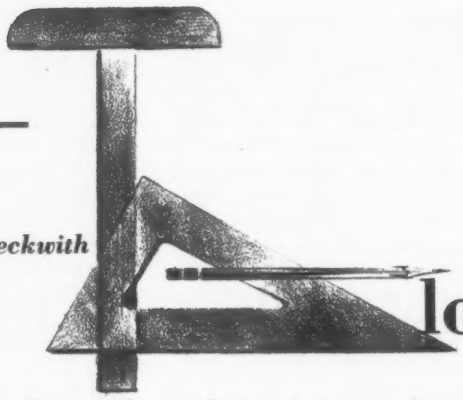
Many NEA departments such as Social Studies and Secondary School Principals have taken advantage of this service and DAVI can do the same.

An especially planned tour means that DAVI members can choose the countries they wish to visit and at the same time have the opportunity for studying AV developments in countries such as England, Germany, France, and Italy. Arrangements can be made to visit audio-visual centers, to meet AV leaders, and to be present at any international meetings scheduled.

The cost of the tour cannot be quoted until the final itinerary is determined but it will range from $1100 to $1300 per person. This includes all transportation, rooms, and many meals.

If you, your family or friends are interested, please write the national office. If response warrants it, definite action will be taken.

THE ARCHITECT—looks at



Presentday instructional materials require greater ingenuity on the part of the teacher than old fashioned recitation methods. The author explains why this fact has special meaning for the architect.

by C. Gates Beckwith

ARCHITECTS by virtue of their training and professional qualifications are aware of the advantages to be gained from visual impact. Scientists tell us that 80 to 90 percent of human perception is visual, and every architect who has had to get design ideas across to a client will agree with that figure.

Even the advertising field is becoming increasingly attuned to the accentuation of the visual; hard sell copy and sledge hammer claims have lost their conviction. Weary words can no longer carry the selling burden. Something new is needed.

The something is not really new, but a re-evaluation of past and current practices. In architecture and the audio-visual field the re-evaluation relates to the proper planning of the classroom to create a learning environment best equipped to utilize all instructional materials.

Why have we put projectors, screens, and other audio-visual equipment in only a small percentage of classrooms today? With a few exceptions the fault lies not in classroom planning alone. Architects today are anxious to create schools and classrooms which are functional and comfortable environments for the learning experience. However, until the instructional materials are defined as part of the architectural program and given a realistic budget allowance in the school program, the architect is handicapped in planning for them.

It would be helpful to discuss here those things the architect can learn only from the audio-visual specialist so that his schools will have well-designed classrooms and so that he can avoid the pitfalls encountered in today's classrooms. Are there rigid principles governing the location of chalkboards, speakers, projection screens? What is the architect likely to overlook in future classroom design? What is the effect of the classroom on related school areas?

It is of paramount importance that the architect understand this fact: the instructor who is capable of incorporating into his program present-day instructional materials and equipment must devote far greater time, energy, and vision to teaching than is required by the text and recitation method. What this should mean to the architect is that while the classroom must obviously be designed to encourage and abet such an instructional program, it must also offer the exceptional teacher an opportunity to put his ingenious mind to work. The talented teacher, while making the most of a classroom properly designed for instructional materials, follows no set procedure, but continually creates new methods, techniques and presentations. He must therefore, have a means to experiment, and freedom to control certain aspects of the instructional environment.

In designing this environment, the architect must not try to be consciously clever, or strive for tricky design. Too often such ingenuity has caused him to overlook a straightforward solution. The classroom, it should be remembered, is a tool for the instructor and an aid to the program—not in itself an end result.

For discussion purposes, audio-visual materials can be grouped into three categories:

Nonprojected—objects, models, samples, mockups, displays, work areas.

Projected—in general motion picture, slide, filmstrips, opaque, and micro projection.

Auditory — recording equipment, radio, television, phonographs.

The last two categories require the greatest clarification and re-evaluation on the part of the architect and the visual expert. What kinds of projected and auditory equipment are to be used in the classroom? How? And what are the individual demands of these machines which will affect room layouts, light control, and electric services? (Problems also are presented by heating, ventilating, and acoustics, but it is up to the experts in these fields, not to the audio-visual specialist, to solve them.)

Room layouts will be affected chiefly by the projection surface. Will it be fixed, portable, or both? What is its location and size? What type will provide effective viewing? Some of the problems are concerned with wall surface. Plaster walls might serve as fixed projection surfaces, as might light colored chalkboards. If the projection surface is to be applied to the structure, provision must be made for its application. These things the architect must know in advance; they must be decided upon early in the overall program.

Light control falls into two categories, daylight and electric. Consideration must be given to orientation so that glare and sunlight do not cause unpleasant conditions. The various degrees of room dimming, darkening, and baffling must be considered so that the minimum and maximum may be provided. And we must be told how acceptable present means and materials are for accomplishing this control.

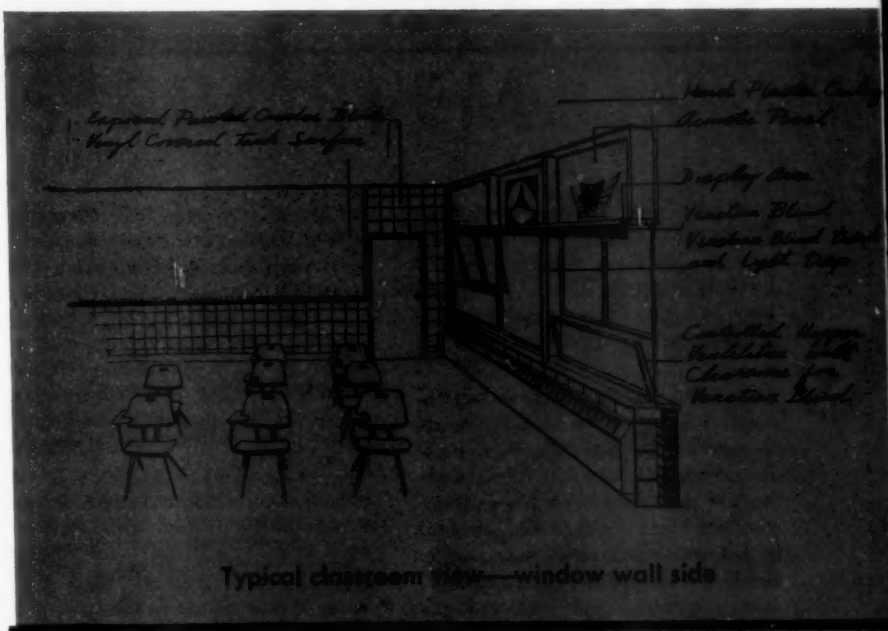
ks at AV

Electric services can work havoc on the best equipped audio-visual area. The best of intentions are defeated if outlets and switch controls are inaccessible or inadequate; if the sound distribution system consists of a central amplifier when the equipment is best suited to multiple installation of low-level amplification; if the speaker cable was built in to relate the loudspeaker and projector in an inefficient way; and if television conduit was omitted in order to lower initial costs and five years later costs twice as such to install.

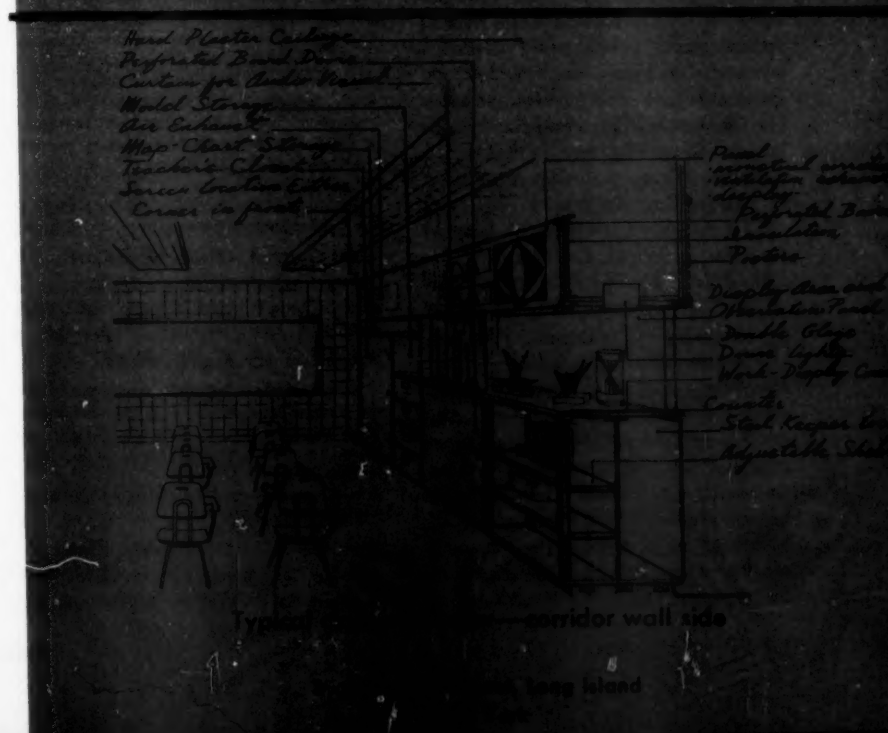
The Syosset High School is an example of planning with the above considerations used as a guide to supplement the building program requirements. The illustrations show two views of a typical classroom.

It would appear to us that incorporating these considerations will not materially affect the actual building cost. But because the total cost contains a portion designated for furniture and equipment, the audio-visual specialist must be able to indicate at the outset that part of the budget which should be directed to audio-visual equipment and facilities.

Architects are increasingly looking to the audio-visual experts for information, guidance, and clarification on instructional materials and principles. It is essential that both parties realize that the recommendations and designs we make today are not the final answers. Research and experimentation must be a continuing process. The classrooms we build now must serve as testing laboratories for the future evolution of classroom design.



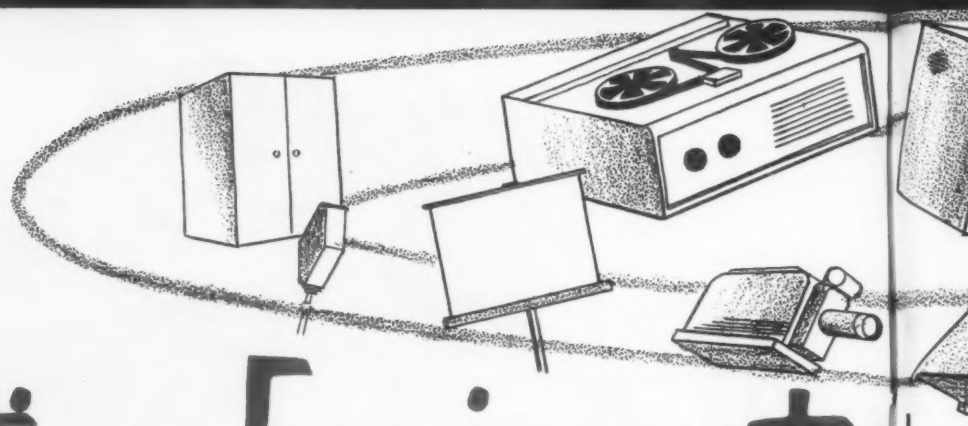
Typical classroom view—window wall side



—corridor wall side

Long Island

By Horace C. Hartsell
and
Charles A. Norford



Selecting Equipment

SURELY YOU REMEMBER Steve Clindon, newly appointed audio-visual director from Caliche Corners. At the last DAVI meeting he visited with so many of us concerning the selection of AV equipment for his school.

I remember the amazed expression on Steve's face as we listened to the speaker say, "Through technical leadership we now have teaching devices capable of transcribing picture patterns on tape. The teacher, in her own classroom, may dial a number from the school catalog of motion pictures and with the efficiency of a juke box have the picture flashed on a permanently mounted screen in her classroom." Steve knew quite well that such innovations were for the future. His immediate problem was to develop criteria that would help him select equipment to be used at Caliche Corners School.

In subsequent meetings he learned that the American Council on Education in 1944 had issued a recommended list of equipment, and that the first DAVI yearbook, *The Administrator and His Audio-Visual Program*, contained reports from state departments of education suggesting equipment for school programs. From the discussions of these studies, Steve learned that the number of students and the number of buildings in a given school district are important factors in determining the minimum amount of equipment needed. One speaker referred to the new minimum list recently issued by the Audio-Visual Commission on Public Information. Steve lost no time running down a copy, which is reproduced below.

Equipment (Basic Minimum)

16 MM SOUND PROJECTORS 1 per 300 students or major fraction thereof; at least one for each building.

FILMSTRIP and 2 x 2 PROJECTOR 1 per 200 students or major fraction thereof; at least one per building.

OPAQUE PROJECTOR* 1 per building.

RECORD PLAYERS (3 speed) 1 per first school-year class; 1 per five other classrooms; at least two per building.

TAPE RECORDERS 1 per 300 students or major fraction; at least one per building.

AM-FM RADIO and TV ALL CHANNEL RECEIVERS (where appropriate program materials are available) 1 radio per five classrooms; at least two radios per building; at least one TV set per building.

OVERHEAD PROJECTOR* (7" x 7" or larger) 1 per building.

SCREENS (square, 60" x 60" or larger) 1 per each two classrooms.

Light Control (Basic Minimum)

Some device or method must be used in each classroom to reduce the light sufficiently for satisfactory projection.

Personnel (Basic Minimum)

Someone must be made responsible for the audio-visual program in each building. This person must be given sufficient released time during school hours to do a professional job.

*One of these must be equipped to handle 3¼ x 4 slides.

In less formal meetings Steve requested the group to consider the problem of selecting equipment by asking the question, "What other principles should one be concerned with in selection of equipment?" Let us listen in on the discussion of Steve's problem. As we enter we hear the Layton School AV director emphasizing the importance of the school's philosophy in selecting equipment. He is saying, "The philosophy of a school system is best expressed through the experiences students have at school. Lack of concern for individual differences in learning, a minimum of experiences beyond the classroom, and rote memorization of isolated facts need little if any audio-visual materials and devices. On the other hand, if the philosophy of a school gives direction to a curriculum which enriches and increases experiences, develops wholesome attitudes and forms generalizations, and emphasizes purposeful learning, an array of audio-visual materials and equipment is needed."

The group agreed that what is to be taught and who is to be taught is important in selecting equipment, and that most schools encompass the latter philosophy. But Sam Jones from Swaymore Schools would not pass to another principle before reinforcing the thought by saying, "To execute this philosophy, classrooms must be constructed or redesigned to allow for light control, adequate ventilation, and quality sound so that all types of projection and sound equipment can be used effectively.

or STEVE'S PROBLEM

Sufficient chalkboard and bulletin board space must be arranged; flannel boards and screens must become a part of the room furniture; stands for displaying objects, charts, and maps must be made available to meet the needs of the learning experience."

"If the philosophy of the school is so important to selection of equipment, we should next discuss the *type of curriculum organization*," proposed Earl Jackson from Meadow. "One must take into account the curriculum organization of a school and the types of schedules being administered in respective buildings."

"You know, we too frequently overlook this principle in selecting equipment," chimed the AV director from Hagadorn. "For example, an elementary school having a homeroom program differs from one having a departmental program. Homeroom organization, where students remain with the same teacher throughout the day, permits greater use of equipment. But the teacher of a special subject in a departmentalized program would probably want the equipment at her teaching station for the entire day."

"That's my point," replied Earl. "A departmentalized program would require more equipment to be available at a given time than would be required in a homeroom organization."

As the recorder was listing the curriculum factor, the group discussion had shifted to *the availability of materials and devices*. Like Steve, we never cease to be amazed at the technological advancement in audio-visual equipment and materials. There is a tool for each communication job. From kerosene to incandescent lamps; from manual to automatic control; from opaque and transparent still pictures to motion pictures with optical and magnetic sound; from tape recordings to portable sound systems—the equipment parades before the selector.

"Yes, all of this equipment exists," someone volunteered, "but aren't there questions that we should answer before selecting equipment?"

Some Pertinent Questions

There definitely were questions to be raised—to wit: (1) Is my school system providing filmstrips, slides, flat pictures and recordings in each building? (2) Do we, through ownership or through rental, have a ready supply of educational motion picture films? (3) Has our state or region provided a tape service to schools? and (4) Do we have facilities and know-how to prepare teaching materials to be used in special equipment?

Finally the group leader summarized by saying, "The availability of instructional materials, properly placed in the school's curriculum, will encourage a greater use of a wider variety of teaching tools. Most of the broad fields of the curriculum have been adequately treated by producers of educational materials and one is encouraged to note that even more materials are being planned for the future."

"From my several years of experience with the Layton schools, I find that we must do more than just supply materials," stated the Layton director. "To obtain greater use of projection and recording equipment, selection as well as availability of materials must be considered. I believe selection should be based upon service and durability, purpose of use, ease in operation, and quality of performance. Teachers tend to make more frequent use of equipment if it is standardized and conveniently located. Choose a brand name that has the quality desired and make it uniform throughout the building."

"But how can we *anticipate the use of equipment?*" asked Steve.

"In my school the audio-visual director, or some other responsible person, keeps sufficient records to determine the number of requests for equipment that were unfilled," answered one AV director. "Through this means, it is possible to determine the number of pieces of equipment needed and to anticipate the need for additional types."

(Continued on next page)

Another added, "We increased the demand for new types of equipment at my school by demonstrating them in an in-service teacher education meeting. The AV Committee tries to note the degree of interest exhibited and, by follow-up interviews, tries to determine the degree of use teachers would likely make of the equipment."

"You know, another way to gauge future needs is to listen to what teachers have to say about equipment after they have seen it demonstrated at a conference," suggested a newcomer to the group.

"We have not listed the *extent of use of existing equipment.* How many times should a piece of equipment be used before we can justify purchase of an additional piece? Shouldn't this be listed as a factor in selecting equipment?" Earl Jackson wanted to know.

Several members of the group quickly said, "There is no fixed answer."

"I'll give you an example," stated one. "Take a micro-projector. It may have little use due to its unique task of magnifying materials too small to be seen by normal vision, but it must be made available to the intermittent users. And, too, there would naturally be fewer requests for projectors and recorders from a small staff than there would be from a larger staff."

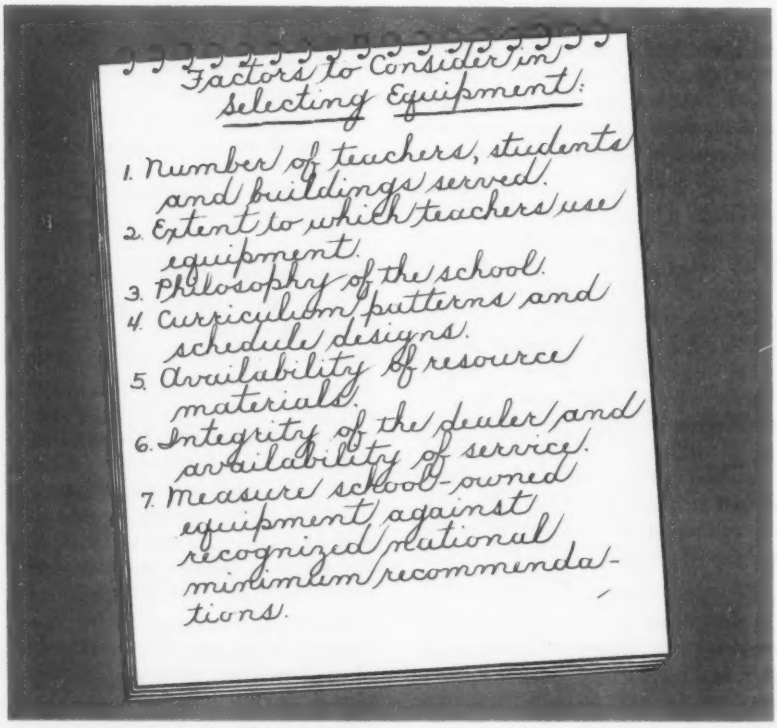
"I know," responded Earl, "but, while staff size may limit the number of duplicate pieces of equipment, it should in no way cause the types available to go below the minimum level. Also audio-visual equipment must be available in sufficient quantity and type to serve requests at the peak period of the school year. Such a period may be determined by plotting use-graphs for each piece of equipment owned."

Earl made a sketch of the use-graph employed in his school. After several questions were asked, the group pointed out that limited use of equipment as revealed by a graph may be due to several factors other than low teacher interest. The cause may stem from administrative restrictions on operating the equipment, from equipment that is obsolete or in need of repair, from inconvenient storage, or from inadequate classroom facilities. When a cause is known, an adjustment may be made. One AV director stated that his school had increased teacher demand for equipment some 40 percent by replacing low wattage filmstrip projectors with 500 watt projectors. Another reported that his school had found success in providing light control in classrooms and by convincing school authorities that teachers and students should be allowed to operate the equipment.

"Shouldn't we list at least one more principle for selecting equipment before we end this discussion?" sounded a new voice. "One that I consider very important is *the source of supply for obtaining equipment.*"

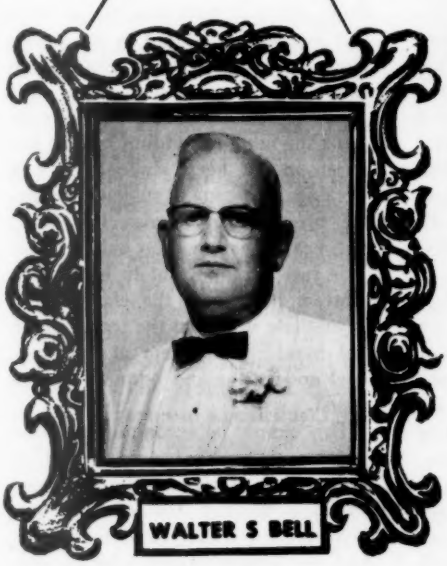
The group proceeded to discuss this all-important point. In summary they agreed that much depends upon the dealer from whom they buy. The availability of fast, dependable service on equipment repair is of prime importance in maintaining a good AV program. School authorities are enticed at times to purchase from a firm which undersells by sacrificing service arrangements for the equipment selected. If the equipment must be shipped several hundred miles for repair while your school is deprived of equipment for several weeks, refuse to purchase from the firm. Many dealers have a service plan that includes furnishing substitute equipment during repair. Know your dealers, test their products, and select the equipment on the basis of dependable service.

Now, Steve was on his way home recalling all that had been said and shown. As he reviewed the principles discussed for selection of equipment, he took a pad from the briefcase next to his chair and jotted down a few notes.


Factors to Consider in Selecting Equipment:

1. Number of teachers, students and buildings served.
2. Extent to which teachers use equipment.
3. Philosophy of the school.
4. Curriculum patterns and schedule designs.
5. Availability of resource materials.
6. Integrity of the dealer and availability of service.
7. Measure school-owned equipment against recognized national minimum recommendations.

y'all come!



Mr. Bell is director of audio-visual education for the Atlanta (Georgia) City Schools

Department of Audio-Visual Instruction
NATIONAL EDUCATION ASSOCIATION
1201 SIXTEENTH STREET, N. W., WASHINGTON 6, D. C.

CONVENTION CHAIRMAN PROMISES SOUTHERN HOSPITALITY

We're right much interested in having you in Washington at the Sheraton Park Hotel March 3-6 for the biggest annual meetin' the Department of Audio-Visual Instruction ever did promote.

We reckon you'll like what we've been planning. The most thorough-goin' study you could ever want in three major areas, namely: the Curriculum and AV, Local Production of Materials, and Public Information: Involving Our Publics in the AV Program. Mind you, we're fixin' to have both general sessions and small group meetins'.

Y'all are going to have a chance to sit in on committee work sessions, to see a do-it-yourself fair with locally produced materials from all over the entire country, and to visit the most intrigain' commercial exhibits you ever did see.

We sure 'nuff aim to take full advantage of bein' in Washington. We've got no end of important gentlemen lined up from the NEA, the American Council of Education, and from the U.S. Office of Education and other government agencies to help you with your problems. We're takin' you to see demonstrations at the Library of Congress, Navy Pictorial Laboratory, National Institute of Health, and the Army Map Service.

And if y'all come early you're goin' to have the opportunity for sightseeing tours--maybe attend one of those social affairs the embassies give.

No matter how you look at it, this is one AV ruckus y'all can't afford to miss. Y'hear!

Walter S. Bell

	SUNDAY, MARCH 3	MONDAY, MARCH 4	TUESDAY, MARCH 5	WEDNESDAY, MARCH 6
MORNING				
AFTERNOON				
EVENING				

an Audio-Visual climate

GO INTO ANY SCHOOL in the country these days and you're apt to find that in a large number of the classrooms, the lights are out and the shades pulled. Intriguing sounds filter through the closed doors as students take their first safari through Africa, listen to the London Symphony or witness the life cycle of a monarch butterfly.

This is the age of audio-visual instruction, literally carrying the world into the classroom so that the learning experiences of today's students may become more vivid and meaningful.

With the advent of audio-visual instruction, every classroom has taken on the additional function of an audio-visual room. This calls for a fresh look at the adequacy of today's school buildings to aid in the use of modern teaching tools. Among other things, it must be determined whether or not the present school plant is equipped to provide the proper heating, cooling, and ventilating—without noise or drafts, and under all conditions—to each classroom.

Until recently, the effect upon learning of temperature and ventilation in the classroom was not fully appreciated. The temperature was either too hot, too cold or just about right. Today, studies of the relationship between thermal environment and learning efficiency have given temperature—and all it implies—new meaning and greater prestige. It is now apparent that more planning must go into providing the proper climate for learning in the classroom, whatever the materials being used.

And audio-visual materials do put a school's heating and ventilating system to a real test. The climate in a classroom not properly heated and ventilated can have disastrous results upon the effectiveness of the materials presented. As an example, observe a reasonably alert class prepared to watch a motion picture.

To use this instructional material as it should be used, the proper degree of darkness must be obtained and all disturbing external sounds eliminated. So the windows and the light control curtains are pulled and the lights turned off. The light level is now set to maintain the attention of the students upon the highest brightness area—the screen. But with the window ventilation shut off, what happens?

Students function like little furnaces. The total heat generated by the students in an average classroom will often approach 20,000 BTU's per hour. This is enough to heat an average five-room house, even when the temperature is freezing outside. It's not surprising then that in a classroom not properly cooled through mechanical ventilation, body heat alone will force the temperature well above that of a reasonable learning environment.

The students become drowsy. They drift rather than learn. Even a little dozing so destroys the continuity of the film that the value of the projected material is largely destroyed. With the students restless, inattentive, lethargic—even asleep because of an improperly controlled climate—little learning can take place.

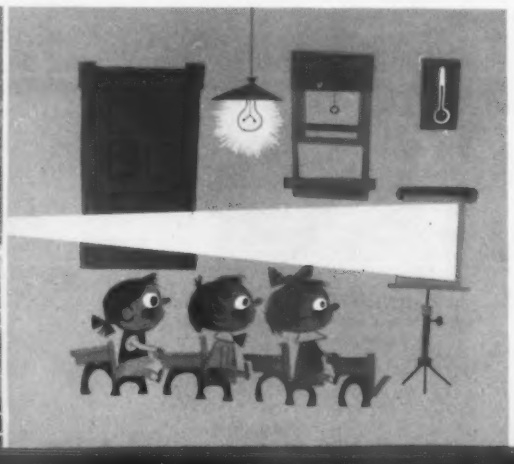
Too, with ventilation cut off, the air becomes saturated with germs from sources difficult to detect. The air begins to reek with odors of perspiring students and aging lunches. The air grows humid, stuffy, and stale.

All of this becomes a hindrance to the successful use of this valuable teaching aid. The teacher, out of consideration for herself and her students, often decides that the discomfort and health hazard is too great. She avoids using motion pictures altogether.

For years educators have recognized the need for adding heat to the classroom to keep students from freezing. And usually sufficient means are provided to furnish this heat. But, heating is less than half the job. It is just as important to be able to subtract heat from the classroom—to ventilate it so that the temperature and humidity are kept at a proper level and germs and odors are eliminated.

This cannot be accomplished satisfactorily through window ventilation alone. With drafts, dirt and noises whisking through the window, students are more distracted than ever. And, by its very nature, window ventilation will not accommodate the use of all audio-visual materials.

Only an automatically-controlled mechanical heating and ventilating system will adequately replace the stale, hot air in the classroom with a fresh stimulating atmosphere. Outside air is automatically introduced into the room at the correct temperature to maintain a proper climate for learning. And the equipment necessary to do this is not only simple, it's relatively inexpensive and easy to in-



Far left—Intriguing sounds filter through closed doors as class takes African safari.

Left—Alert class prepares to watch film. Lights are turned off and windows closed.

by Zephyrin A. Marsh

stall. There are two basic heating and ventilating systems. One system places individual unit ventilators in each classroom. The other consists of a central heating and ventilating plant with ducts branching out to each room.

The unit ventilator is an individual room-size heating and ventilating unit. Its development was prompted by the specific needs of the classroom. So it is not surprising to find it ideal for classroom thermal requirements.

Incoming air and recirculated air pass through the heating coils of the unit ventilator to raise indoor temperatures according to the requirements of the classroom thermostat. The proper ventilation and humidity are provided by mixing combinations of outdoor air and recirculated air as called for by the thermostat. The flow of this outdoor and recirculated air through the ventilator is accomplished by means of a centrifugal fan.

The unit ventilator may be quickly installed in a new or an existing school. In a school now heated by steam or hot water radiators, the radiators are merely replaced with unit ventilators, using the same piping and the same central heating system. Otherwise, a boiler will be furnished, with piping connected to the ventilators in each classroom.

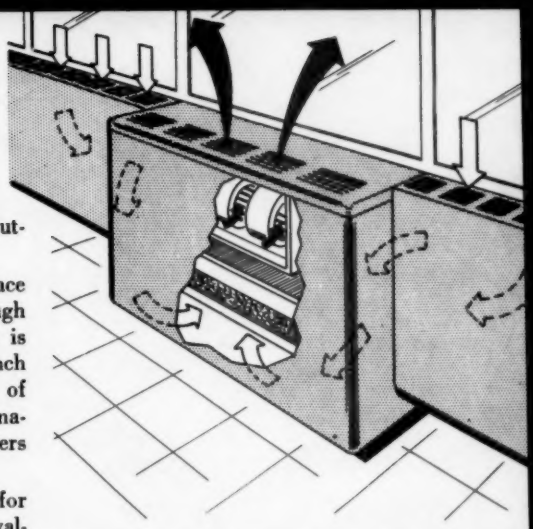
If a school has no central heating system, a central fan system to provide both heat and ventilation may be preferred. It may be installed in an existing school by lowering the hall ceilings and running ducts to each classroom. This system provides a minimum volume of fresh air at all times with a gradual increase in the volume of the outdoor air as the outdoor temperature rises.

Air is heated in the central furnace and distributed to classrooms through warm air branch ducts. Cool air is distributed through cool air branch ducts. A thermostat on the wall of each classroom controls the combination of cool and warm air that enters the room.

In planning the right climate for learning in your school, or in evaluating the climate that now exists, these seven basic requirements for a good learning environment may be of help. The mechanical equipment for your school classrooms should provide:

- Sufficient replacement of air in each classroom.
- Proper distribution of conditioned air.
- Adequate capacity for heating and cooling.
- Classroom control of temperatures and humidity.
- Assured protection of student health and safety.
- Maximum economy of system operation.
- Quiet operation of equipment.

If the mechanical equipment in your school can measure up to these minimum requirements, you can be assured that you are on your way to attaining new heights in the production of more take-home learning by your students. And this, of course, is why schools are built, why lives are devoted to education in the first place.

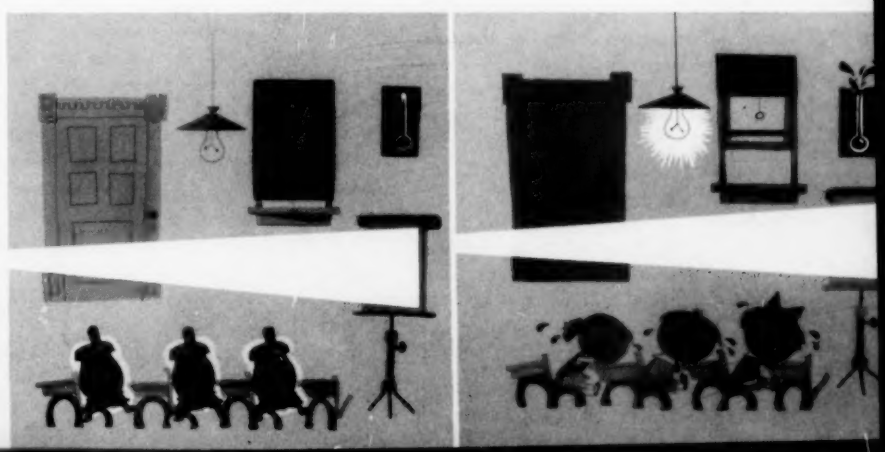


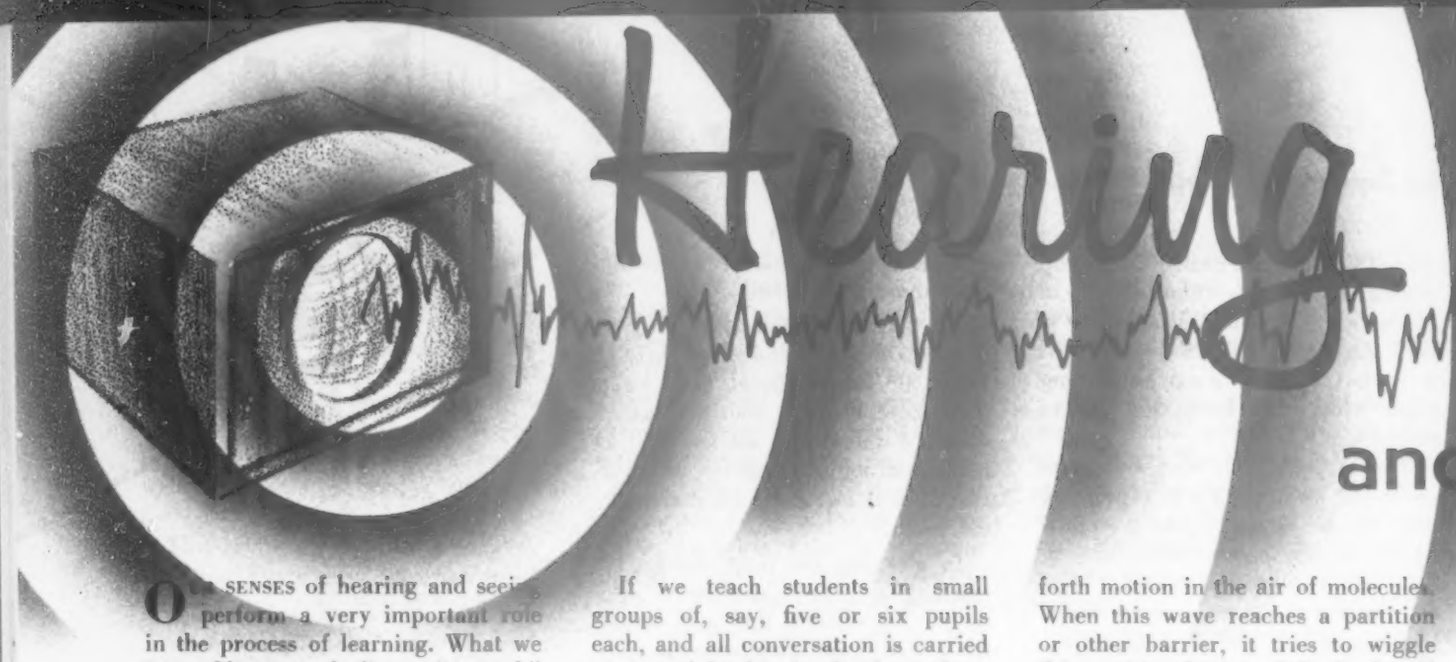
Incoming air and recirculated air pass through heating coils of unit ventilator.

Fan system is installed by lowering hall ceilings and running ducts to classrooms.

Right—Students function like furnaces, forcing heat above learning temperature.

Far right—Students doze and lose continuity. Film's learning value is destroyed.





Hearing and

Our senses of hearing and seeing perform a very important role in the process of learning. What we see and hear may be live or "canned," but in many respects the problems are similar for all types of sources. In this discussion, we shall disregard the seeing problems and deal only with those affecting our ears.

In discussing hearing, we must consider not only the problem of providing the student with clear, easily understood sound, but we must also keep him free from the distraction of sounds from other spaces. How will a student, for example, be highly attentive in a dull Latin class when the Social Studies group in the next classroom is laughing heartily over some joke and the French class across the hall is singing "Frère Jacques"? These problems of distraction are perhaps even more important than those of giving a proper acoustical design to the room itself.

Let us look first, then, at the problem of insulation from distraction and interference. We know a great deal today about the production of speech sounds and how they are heard, and what sorts of noises will affect intelligibility. We know, for example, how much noise it takes to make a person in an office say, "This place is noisy." It all has to do with the ability to communicate with other people or to use the telephone. We also find that most of us like a certain amount of noise, that extreme quiet is oppressive. There is, then, some happy medium in which a moderate amount of noise not only makes the space feel better, but also hides minor intrusions from other spaces. This kind of noise we frequently describe as "acoustic perfume."

If we teach students in small groups of, say, five or six pupils each, and all conversation is carried on in subdued voice levels, and no one ever laughs or sings or does anything very different from what everyone else is doing, we can conduct a school in a single large area. This is the situation in many Sunday schools, and it works reasonably well.

But if we go to the more usual situation where 30 pupils are addressed by a single teacher in a raised tone of voice, and these 30 pupils occasionally laugh, sing, or see a movie, we cannot carry on these activities in one large space. We must then subdivide the space and give each group a considerable amount of sound insulation in order to have satisfactory simultaneous conduct of classes.

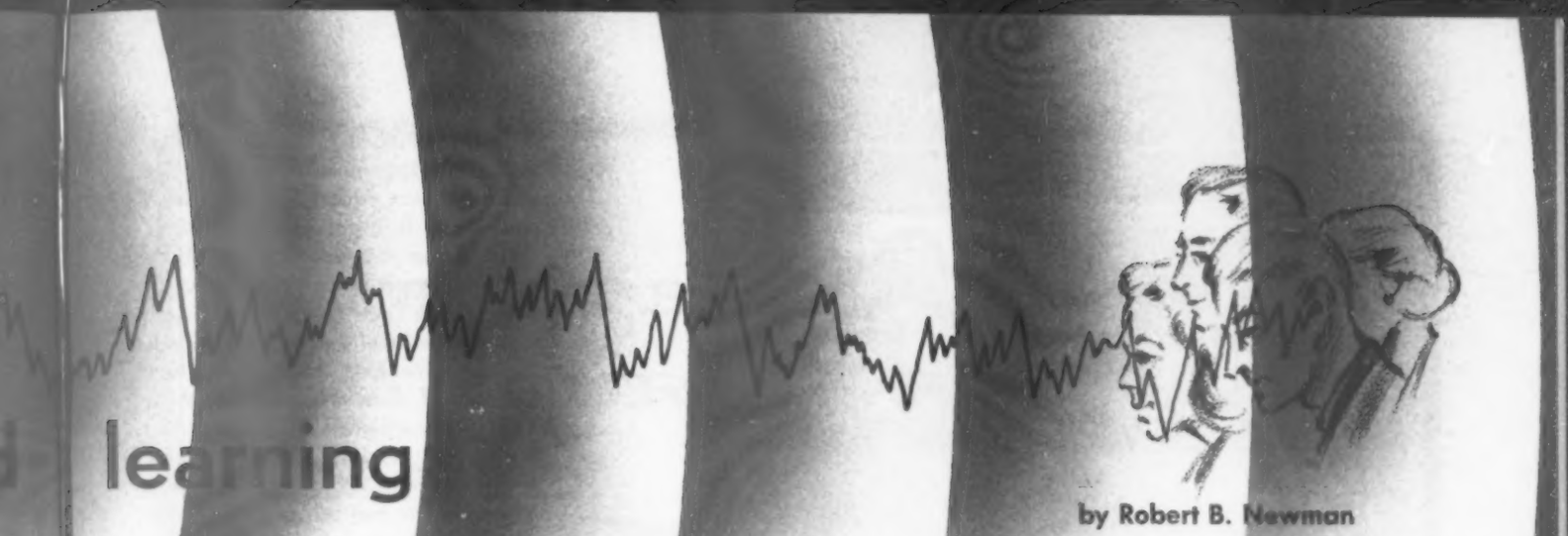
A Set of New Problems

This was not much of a problem in old-fashioned schools with heavy masonry partitions and doors that could be closed. The required sound insulation was almost automatically given by the type of construction used. Nowadays we have a whole set of new problems created by modern building techniques and by demands for "flexibility" and economy of construction, and perhaps by the desire to do something different in the new school building. We see partial-height partitions. We see corridor partitions omitted, and all sorts of devices introduced to increase the flexibility of space. Many of these new approaches to design do not work out well because the designers have not understood the basic facts about sound transmission.

Sound waves are merely back-and-forth motion in the air of molecules. When this wave reaches a partition or other barrier, it tries to wiggle the partition back and forth; but if the barrier has some appreciable mass or inertia it will not move very much. Every barrier will move a little, and when it does, it reradiates a new and reduced sound wave on the other side. The heavier the barrier, however, the more it resists the motion of the sound wave, and the less sounds get reradiated. Sound transmission is dependent almost entirely on the weight and imperviousness of the barrier. Sound absorbing materials (fuzzy stuff) offer almost no resistance to sound transmission. They simply do not reflect very much sound back to the room, but they do not stop it from going through.

Holes, open doors, windows, and louvers transmit all the sound that hits them, and send it right on through to the next space. Thus, we cannot hope to achieve complete privacy in adjoining classrooms unless we surround each with good solid partitions; provide doors which can be closed in the openings; and place windows so that they do not open too close to those in another room. There are no tricks in open planning which can substitute for complete partitioning.

Now, what about open planning—the philosophy guided by such observations as, "Oh well, they leave the doors open most of the time anyhow. Why bother to put them in?" But they *do* have doors which *can* be closed when the noise from neighboring classrooms becomes too distracting. If the teaching were done in small groups as we described above, then the open plan might



learning

by Robert B. Newman

work but it cannot work when we demand that teaching be done in large groups and that pupils be presented with various types of audio-visual materials, and when we permit them to laugh and sing. (We might put headphones on all the pupils for audio-visual demonstrations. This would solve at least part of the problem in the open plan.) The trouble is that unless we have the complete closures we have been talking about, the background masking noise is lower than it would be in the Sunday school situation, and each individual voice of the teacher or student stands out and is audible and distracting.

Confusion in Terms

What about "sound proofing" the ceiling? This is the term so often used in referring to the installation of sound absorbing materials on the ceiling. Sound absorbing treatment in a space reduces the reverberation time of the space, increases speech intelligibility, and, to some extent, reduces the spreading of sound. Thus, the general level of background noise is further reduced, and the few sounds which come from the immediate neighbors become even more intelligible and distracting than they would have been in a highly reverberant, hard finished space. In other words, the situation may actually be worse with a sound absorbing ceiling. Sound absorbing materials, while very useful in the control of reverberation in school classrooms are by no means to be interpreted as "sound proofing." Sound proofing is given only by complete heavy walls and solid doors which can be closed.

Another possible arrangement of schoolrooms which has been suggested from time to time has been that the corridor space be enlarged to make a sort of common room in which audio-visual demonstrations might be given, or which might be used for play areas.

Futile in "Open Plan"

Of course, such an arrangement is completely hopeless in the "open plan," but can be made to work if we provide enough sound insulation between the common large corridor and the adjoining classrooms. This may mean the installation of two sets of doors between the classroom and the corridor (probably with a sound lock), and complete and heavy partitions throughout. Here, of course, the installation of a highly efficient absorbing material on the ceiling will no doubt do a great deal to reduce the noise that would otherwise be sent into the classrooms.

The type of isolation we describe cannot be accomplished, though, with folding partitions or other lightweight devices for opening the classrooms into the central space. The dividing element must be heavy and solid. If a movable or flexible partition, for example, is contemplated, plans must be made for two sets of solid wood doors, each two inches thick with complete weather stripping on all sides, and set about one foot apart when they are fully extended. This presents a tremendous garaging problem and opening and closing the doors is not something which is done on a moment's contemplation. The more usual folding wood doors or flexible plastic closures have almost no effect except to provide a visual barrier.

Having considered the problem of providing the needed insulation between the several classrooms in the school, it might be well to look for a moment at the problem of providing good hearing conditions within each of these isolated spaces. The installation of special sound absorbing materials on the ceilings or walls of classrooms has become almost standard practice today in new construction, and is needed for the control of reverberation.

A classroom with no treatment certainly is not up to presentday standards for either listening to direct sound or for recorded material. There is much debate about whether the entire ceiling of a classroom or only about half of it should be treated. This is a matter which will have to be determined on the basis of the proposed uses for the classroom. A general rule cannot be given.

AV Not Special Problem

The treatment which gives good listening conditions for direct live speech will also give good listening conditions for recorded programs. Actually, the acoustics problem in audio-visual presentations are little different from those involved in any other kind of hearing in the school. The loudspeaker should not be mounted directly on a wall of a classroom adjoining another room, because this will defeat in large measure the insulation provided by the wall for airborne sound. Once we begin to drive the wall directly with a loudspeaker we are reducing its insulating value.

In most well-designed auditoriums seating up to 1000 people, a public

(Continued on page 194)

NEWS AND VIEWS

A SIGNIFICANT TEST of the efficiency of audio-visual techniques in teaching modern languages will take place this fall when four major universities and two public school systems will teach a beginning French course through the intensive use of especially prepared AV materials.

Participants are the University of Tennessee; Indiana, Purdue, and Wayne State Universities; and the Detroit and Minneapolis public schools. During the spring semester, the University of Michigan will also start using the same materials.

The new course is the work of the Modern Language Audio-Visual Project, a voluntary organization directed by representatives of the participating institutions. George Borglum, chairman of the French Language Department, Wayne State University, will have charge of developing materials.

For the first year, the course materials will include a specially written class workbook, sets of 30 color slides for each of the 40 lessons in the workbook, and a set of 40 tape recordings for use with these lessons. The course is designed for use in conjunction with language laboratories.

To complete materials which will be used in the latter half of the course, Dr. Borglum is spending September and October in France where he will arrange for additional slides and the recording of several French classics by professional groups.

The Modern Language Audio-Visual Project eventually expects to produce a series of motion pictures which will be used in conjunction with the slides and tape recordings. Six motion pictures have already been produced for use in teaching intermediate French.

Members of the Board of Directors are George Borglum, Wayne State University; Elton Hocking, Purdue University; Charles Staubach, University of Michigan; Walter Stiefel, University of Tennessee; Clarence Wachner, Detroit public schools; Robert LeAnderson, DAVI, NEA; Donald J. Lloyd, College English Association.

TV TOPICS

The recent action of the Federal Communications Commission in decreeing that after a period of ten years all telecasting will be in the ultra-high frequency portion of the spectrum has great implications for educational TV. The big handicap for educational stations operating in UHF has been the fact that most TV sets will not receive UHF signals and the cost of UHF conversion has been enough to deter persons from purchasing sets with UHF tuners as long as they could receive most of the commercial telecasts on VHF channels. The action of the FCC means that within ten years every set will be able to receive UHF and the potential audience for our "orphan" educational stations will be expanded tremendously. Ten years is not too long a period for educators to learn how to use the medium to best advantage.

• • •

There are now 25 educational television stations on the air. During the rest of 1956, it is expected that seven additional stations will be activated including one at San Juan, Puerto Rico.

Miami University, at Oxford, Ohio, is the first organization to apply for a low power educational television station. It is estimated the cost of construction will be $55,855, with an operating cost for the first year of $30,057. A new publication, *Low Cost Educational Television Stations*, is now available from the Joint Council of Educational Television, 1785 Massachusetts Ave., N. W., Washington 6, D. C. The comparatively low cost of establishing and operating the low power educational television stations is expected to make them of great significance.

• • •

Ann Hyer, who represented DAVI at the Television Committee Meeting of the Southern States Workshop, reports: "I have again had impressed on me the fact that schools do not have television receivers *even in systems that have educational channels!* One such city system stated that as far as they know not a single school has a TV receiver. This system does have an active audio-visual program."

The implications of this fact are that unless audio-visual directors start purchasing television equipment and start working harder toward the utilization of radio and television as audio-visual media, we are bound to see a separate set of building coordinators come into being. This will tend to fragment our field even further and is a challenge that audio-visual directors must meet.

OF PEOPLE AND PLACES

HAROLD E. RICHARDSON who returned to the United States in September after two years as an AV officer for ICA in Afghanistan has gone to New York State Teachers College at Oswego as professor of education specializing in audio-visual methods. Mr. Richardson set up the AV center in Kabul which now produces posters, charts, exhibits, moving pictures, filmstrips, and photographic presentations. These materials are in constant demand by the Afghan ministries of health, education, agriculture, and mining. Three Afghans will train at the University of Syracuse this year, Mr. Richardson reports, to be followed by two more next year. This will make a staff of five for the Kabul center.

(Continued on page 192)

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By Andrena Crockett Briney

WHAT MAKES A CLASSROOM

NO EXPERIENCE is more delightful than walking into an attractive classroom where eager children work with purpose and enthusiasm. Here, there is a feeling of expectancy and adventure. Something interesting is happening or everybody knows something interesting is sure to happen soon.

In contrast, a drab classroom with bored pupils and an harassed teacher is a heartbreaking experience—heartbreaking because we realize that the situation can be harmful to children.

How then can a teacher create the right environment? How can she make the classroom a place where rich and satisfying learning is possible? She can do three things.

First, she accepts the fact that the people with whom children come in contact are the most important part of the classroom environment. She knows the value of the teacher's being a sympathetic and friendly person. She realizes that it is upon the children's interests and abilities that she must build, so she treats their ideas and feelings with utmost respect. She recognizes too that interested parents are a necessity. Friendliness and cooperation with other teachers and with the administrators of the school are an essential part of a good atmosphere for learning. Certainly, the classroom teacher remembers that good human relationships are the very foundation of a rich learning environment.

Secondly, the classroom teacher recognizes her responsibility to provide a wide variety of educationally worthwhile experiences. Knowing that no one method always works, the wise teacher uses many approaches and varied materials. In her classroom children are active and creative. They read, write, and listen with purpose. Field trips and interviews provide firsthand experiences for them. Pictures, exhibits, films, and demonstrations help to make learning real and memorable. Through informal drama and role playing, learning becomes personal and often exciting. Thus the creative teacher overlooks no method or device which makes the classroom a place for zestful living.

Thirdly, the classroom teacher is aware that the best physical resources are essential for effective teaching. She makes every effort to secure equipment which will contribute to learning. She loses no opportunity to drive home the fact that American education depends to a high degree upon providing every classroom with an adequate supply of the best instructional materials.

However, miracles are performed every day by teachers working with entirely inadequate resources.

Miss Mary, as her pupils call her, teaches in a crowded school in an old section of a large city. There is not even a playground—only a patch of blacktop scarcely larger than a tennis court. The walls are dark, the floors oil soaked, the furniture old and scarred. But the visitor who enters Miss Mary's room after the dismissal bell will more than likely find 15 or 20 boys and girls still busy with the work they are loath to leave.

Too Busy To Look Up

Absorbed in their projects, they are scarcely aware of visitors. An hour is not long enough to view all the interests and activities of this class. How has the teacher achieved such a stimulating environment?

Good realtionships are evident, as is an expertly planned program. Experiences of high quality are abundant. The children obviously have a sense of personal accomplishment. They enjoy working together and have pride in their achievements as a group. Miss Mary has used several ingenious methods of keeping the parents informed and therefore interested and ready to help. Materials of many kinds are found in the room. The set of reference books is a gift to the class from Miss Mary herself, and it is difficult to say how many other materials and learning aids have been bought by this dedicated teacher.

There are many "Miss Marys" in our country. Some of them teach in better classrooms and some in worse ones. Year after year they continue to perform similar miracles and theirs is an inspiring story. Yet it contains a disgraceful element—disgraceful in the fact that the richest nation on earth has failed to equip its schools with the best that its inventive genius can devise. Securing materials adequate for a stimulating program should not be left to the ingenuity and generosity of teachers.

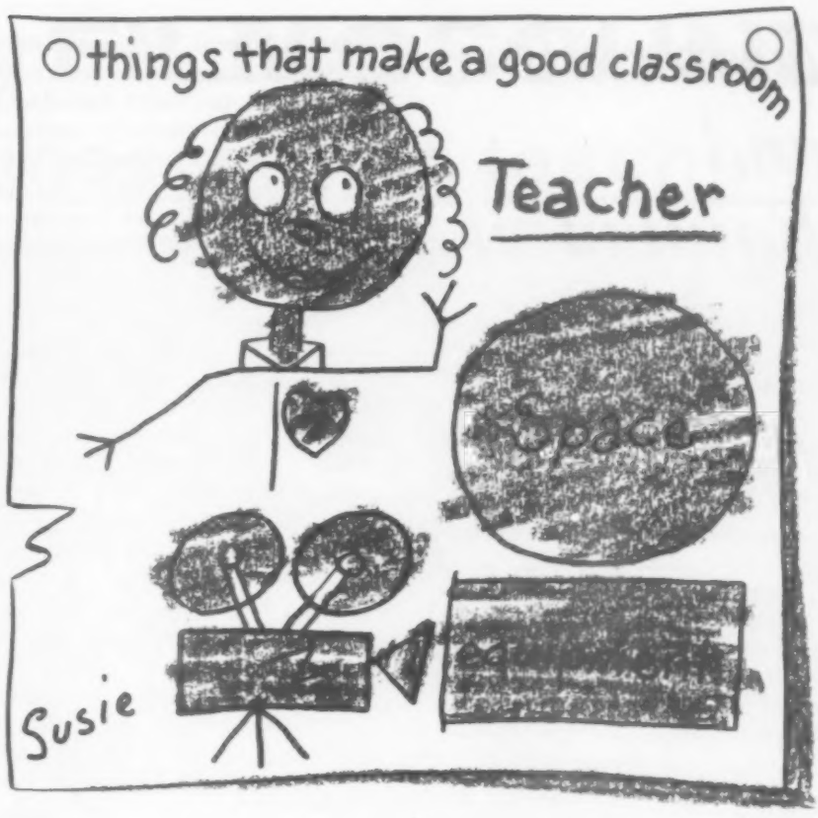
There are many schoolrooms, dark and inconvenient, but of basically good construction which careful planning and remodeling will change into attractive and efficient places for education. Often such remodeling is simple and not too expensive.

Not so long ago the writer and her class stood at the door and congratulated one another on their "new" schoolroom. It was the first day of school, and during the summer the classroom had been remodeled.

A row of cabinets in which the teacher could store materials had been built along the wall. Cabinets for art materials were underneath the bulletin board at the back of the room, and a row of bookshelves had been built beneath the windows. There was a cabinet for the record player and record collection. Electric wall plugs were generously placed throughout.

The science cabinet which had been planned by the teacher and her class was a special delight. Now complete, it offered storage space along each side and across the bottom. A display

click?



case behind sliding glass doors, in which a child could exhibit his special science collection or hobby, formed the center.

A half partition with a metal planter across the top divided the long locker room into two areas. One part became the teacher's office and a place for small committee meetings. The other would be used as a workroom. Clanging metal lockers were replaced by a row of shelves for shoes and a coat closet.

With walls painted a soft pink, the floor sanded and refinished, and new cornices and draperies placed at the windows, it was truly a "new" room.

Careful study is needed to determine the best way of making schoolrooms pleasant, cheerful and adequate for children's activities. Even more careful study is needed to insure that new schools provide an environment which encourages good teaching and learning. There is danger that a school may be a monument to civic pride rather than a suitable place for boys and girls to live and learn. It is possible that children's actual needs call for simple buildings—spacious, easily kept, but always equipped with a copious supply of instructional materials.

To lay down rigid specifications is difficult for the teacher because what goes into the best classroom is sometimes intangible. It has something to do with a certain spirit that crops up in unexpected situations. Witness the following episode which the writer experienced on an evaluation trip.

After a tour of a new and beautifully furnished school the principal invited the evaluators into the basement where they were surprised to find several additional classrooms. Temporary partitions had been built to provide rooms for a continually increasing enrollment.

One of the visitors asked how teachers felt about being moved from the model classrooms above. (This was truly a basement with the inevitable puddle of water in one corner.) The astonishing reply was that teachers requested these rooms. Why?

One sixth-grade teacher had asked that her pupils be permitted to use a large unoccupied floor space for individual and group projects. The idea spread and soon it was necessary to divide the area with ropes to provide working space for the other classes. Here were illustrations, murals, exhibits, special reports, a stage for dramatizations, and a place for assembling a class newspaper. Many interests were being discovered and developed among the pupils in these basement classrooms.

Why were they desirable? Could it be the advantage of adequate space? Was it because here children could work freely without fear of marring floors and furniture? Was it only that these rooms had been given a more generous supply of materials to compensate for poor surroundings? Whatever the answer the story seems to indicate that constant care and thought is needed for determining the kind of buildings and materials that will meet children's needs for self-expression and for development of talents and abilities.

In summary then, what do teachers want for the boys and girls in their classrooms? They want first of all space.

- Space for children to work individually and in groups
- Space to exhibit their work
- Space for experimentation, for construction, for creative work in music, art, and dramatics
- Working space extended to the outdoors by terraces or patios
- Space for storage
- Space for children to play.

Given space, the teacher will want a teaching and learning environment as nearly ideal as possible—sound proof floors and ceilings; adequate heat, light, and ventilation; color and beauty; easy-to-clean and stain proof floors; sturdy furniture for active boys and girls.

Finally, the classroom teacher wants well-written and illustrated textbooks and other reading materials; materials for sketching, drawing and painting; maps, globes, and models; tape recorders, record players and pianos; cameras and projectors—in fact, every kind of equipment and instructional materials that will make learning the adventure it can and ought to be.

Materials and Equipment

Election Year Films

The Vice Presidency. McGraw-Hill Text-Film Department, 330 West 42nd St., New York 36. 1956. 51 min, sd, b & w, $180. A new Edward R. Murrow motion picture from his See It Now series. Comments briefly on each vice-presidency of the past. Former Vice-Presidents Barkley, Wallace, and Truman are interviewed on what changes they would suggest for the vice presidency. Emphasis is on increased importance of this office. A timely topic in an election year.

The President. Encyclopaedia Britannica Films. 1954. 17 min, sd, b & w, $75.

The Presidency. McGraw-Hill Text-Film Dept. 1949. 10 min, sd, b & w, $40.

Voting Procedures. Indiana University AV Center. 1955. 14 min, sd, b & w, $75.

Ticket to Freedom. Ford Motor Co. Sponsored film. 1952. 12 min, sd, b & w, free loan.

Meaning of Elections. Coronet Films. 1953. 10 min, sd, b & w or color, $50 and $100.

Presidential Elections. Encyclopaedia Britannica Films. 1952, 16 min, sd, b & w. $70.

Filmstrips:

The Presidency. Society for Visual Education. 1955. 54 fr, color. $6.

The President. Encyclopaedia Britannica Films. 1953. 52 fr, color. $6.

Our President. Popular Science. 1952. 53 fr, color. $6.

Powers of the President. N. Y. Times. 1952. 58 fr, b & w. $2.

President—Office and Powers. McGraw-Hill. 1950. 36 fr, b & w. $5.

Choice Filmstrips

Milk and Good Health, a 58-frame filmstrip in color, $5, explains the basic recommendations by the Food and Nutrition Board of the National Research Council. The mineral needs of children, adolescents, and adults are analyzed and milk's contribution to these needs is shown by means of excellent graphics. Nurses and nutrition experts will appreciate this film produced by the Bryant Foundation, 737 North Edgemont, Los Angeles 29, Calif.

American Literature—the South, distributed by the Museum Extension Service (10 East 43rd St., New York 17). A well-edited filmstrip which American Literature teachers will welcome. In its 39 frames and manual it reviews the development of literature in the South from the period of early settlement through the pre- and post-revolutionary period. A fortunate contribution to an area generally overlooked. Filmstrip and Teachers Manual, $6.

The Association of American Railroads (Transportation Bldg., Washington 6, D. C.) offers free an excellent set of six filmstrips in color (complete with manual). Explains the operation of a modern railroad system. Titles are *The Story of a Box Car, Railroad Communications, Railroads and Relaxation, Here Comes the Circus, Going Places Safely by Rail*, and *Working on the Railroad.* An abundance of up-to-date, accurate information with a high interest quotient.

Your World, a series of five filmstrips released by Filmstrip House (15 West 46th St., New York 36) with these titles: *Nations Need Each Other, Meaning of Money, Nature Influences Living, Land Forms*, and *Fire—A Dangerous Friend.* These strips (in color) treat world trade, the story of money, climate's effect on man, basic earth forms, and man's use and control of fire. Planned for elementary school, the series stresses broad general concepts. $5 each, or $22.50 for five.

Burgert Reports

Gaps in Audio-Visual Materials Still Exist

TWO VERY INTERESTING TYPES of individuals drop into my office regularly; and their questions and suggestions have led me to feel that we need a clearing house for the exchange of ideas about what new products are needed in the field of audio-visual materials.

Teachers report that there are many areas of the curriculum that as yet are inadequately supplied with films, filmstrips, records, and other audio-visual materials. Representatives of many of our audio-visual distributors and producers ask us each time they call, "What new materials should we be producing to satisfy the needs developing in your program?"

Although the curriculum varies in many sections of the nation there are many subjects and areas of study that are common to all sections or to a sufficient number to justify commercial production of audio-visual materials. It is my hope that our readers will be encouraged to write to me (for this column) their suggestions for needed teaching materials. From these suggestions a limited number will be selected for review in each issue of AUDIO-VISUAL INSTRUCTION so that interested parties may discuss the ideas presented with the individual making the suggestion.

As a start here are a few areas that appear to be neglected and for which there ought to be films and filmstrips:

Cybernetics. Modern industry is making such extensive use of automatic and electronic computing systems that teachers will need film material that explains: (a) Theories underlying computing systems, both mechanical and electronic. (b) How such machines are constructed and how they operate. (c) The tabulation and preparation of material to be fed into these machines. (d) Types of problems that can be handled and modern application to industry.

Driver Education. Teen-age drivers who own their own cars would profit from a film that would emphasize the safety and economy that results from basic maintenance for safe driving. Good tires, safe brakes, adequate lights, and the operating efficiency of windshield wipers, horns, and other accessories should be stressed. This

(Continued on page 190)

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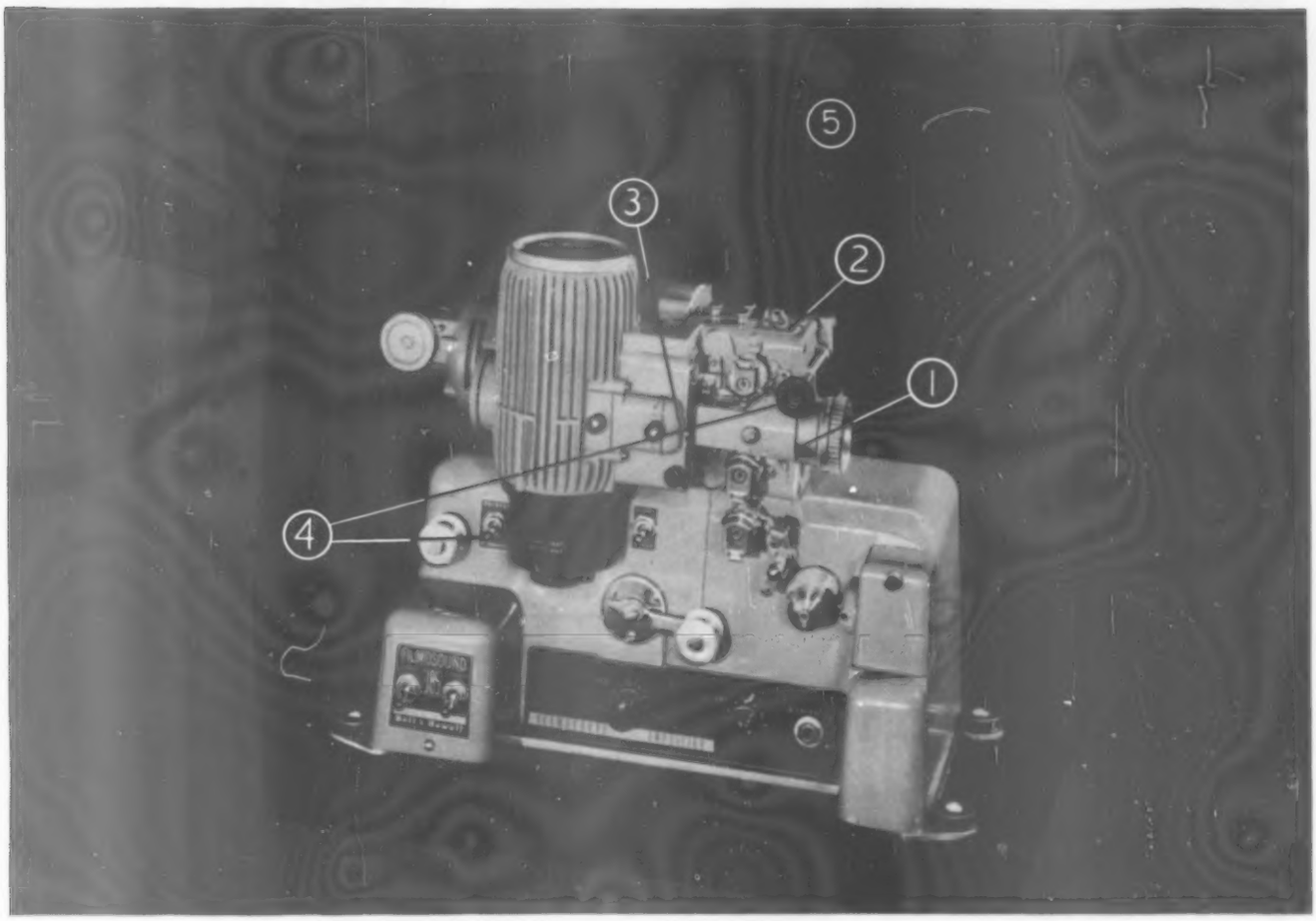

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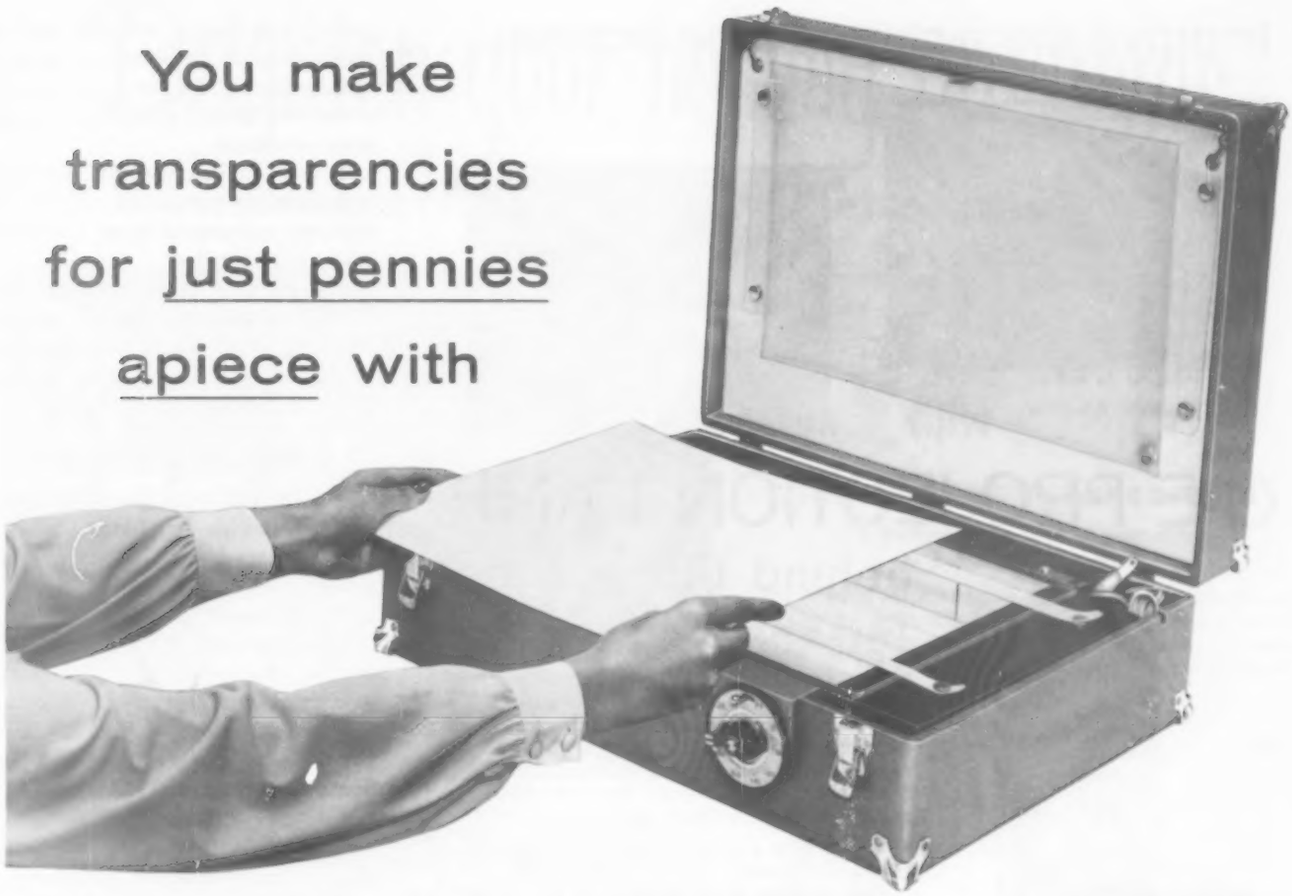
The requirements for the auditorium?			194	No. 3
Audio-Visual Center?			170	

*Refers to Booklets 1, 2, and 3 in the Planning Schools for Use of Audio-Visual Materials Series. Published by the Department of Audio-Visual Instruction, 1201 Sixteenth Street, N.W., Washington, D. C. $1 per booklet.

You make transparencies for just pennies apiece with



NEW OZALID PROJECTO-PRINTER

Now you can make your own projector foils in color or black-and-white for less than one-third the cost of "outside" work. In seconds, you turn out charts, posters, all your visual materials. Ozalid **PROJECTO-PRINTER** is all you need.

Designed exclusively for visual-aid making, it produces line transparencies from *any* original material—written, typed or drawn, loose or book-bound. It's simple to operate... compact, light in weight and easy to carry.

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You get everything you need with Ozalid's new Projecto-Printer

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- Developer
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Please send us more information on NEW PROJECTO-PRINTER . . . and tell us how Ozalid materials can cut costs in our visual aid program.

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Improve the picture on the screen . . .

with a

G-E PROJECTION LAMP

behind the scene

You get more out of your projector—slide or movie—when you put a General Electric projection lamp into it. You can especially enhance the performance of *older* projectors by replacing the old lamp with a new improved G-E lamp. Here are some of the reasons why you can expect best results from your projector—old or new—when you use G-E projection lamps:

- **Higher gas pressure and mechanically formed filaments *increase light output, increase lamp life, provide more uniform light on the screen.***
- **Safety fuse prevents damage to projector socket and protects circuit fuse.**
- **Correct for color and black and white.**
- **Finest, most complete line.**

See your local General Electric Photo Lamp supplier—he will aid you in the selection of the proper lamps for *all* your projection equipment. Photo Lamp Dept., General Electric, Nela Park, Cleve. 12, O.

GENERAL ELECTRIC

Gaps in AV Materials

(Continued from page 186)

might be contrasted with the hot-rodder whose whole interest is centered on speed, paint job, and noisy exhaust pipes.

Insurance. Teen-agers need to know more about the various types of insurance that are available, what is and is not insurable, comparative costs of various types of insurance, and what is the role of the insurance company and its agent in relation to the individual and society. Special films might cover health insurance plans and other specialized types of policies usually handled by a general insurance agent.

Borrowing Money and Credit. Films are needed to explain various types of lending institutions, the types of loans made, and conditions under which loans are granted. Some attention should be given to the Federal Reserve Bank, credit unions, personal loan offices, and the laws that apply to veterans.

Credit, how it is established, protected, and how it may be used by the individual, the business man, institutions, and by the government is a topic of interest to students of business education.

A film on International Exchange and foreign currencies would help students understand better how world trade is conducted.

Let us hear from you and have your suggestions for tomorrow's productions. Send your remarks to Robert H. Burgert, 4100 Normal St., San Diego 3, Calif.

Slides from Brussels

The International Visual Aids Center (37 rue de Linthaut, Brussels) has developed and offers for sale several series of kodachrome 2 x 2 slides designed to provide technical information that will aid in the promotion of international understanding. Sets of Geographical Diomaps mounted as slides are available for Europe (26); North America (24); South America (19); Africa (20); Antarctica (12); France (25); Belgium (33); and The Congo (20) at an average cost of 50 cents per slide. Sets are available in French, German, Italian, Portuguese, Dutch, and English.

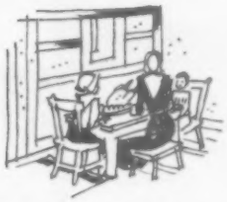
In preparation are several series of Historical Diomaps in color covering the classical period of Greece and the Near East, Rome, The Old Testament, and World War II. A catalog of their complete offering is available on request and includes excellent photomicrographs (2″ x 2″) in natural color. Series in zoology, art, religion, history, and geography. High photographic quality and technical accuracy is apparent.

New in Art

Art and the Growing Child. 58-frame color filmstrip and 10″ 33⅓ lp recording, approximately 13 min per side. A series of pictures of children's artwork is used as stimulus for discussion. One side, the analysis of the art presentation of the film strip, is aimed at an adult audience—teachers or parents. The reverse side is for children—to explain the pictures, stimulate discussion and motivate creative art expression. Films for Education, 1066 Chapel St., New Haven, Conn. 1956. Filmstrip and record. $15.

Brighten your holiday programs

WITH THESE "FIRST-RUN" FILMSTRIPS FROM SVE



The boy who came to dinner was an Indian!

"INDIANS FOR THANKSGIVING"

• Full color • 6 to 11 year olds
• Sound • 49 frames

This delightful new filmstrip, adapted from a story in Child Life and the Childcraft books, tells about two small Pilgrim girls who befriend an Indian chief's little boy who became lost. Their kindness averts an Indian raid and the settlers have added reason for giving thanks. Recorded narration and musical background.

A249-1R Indians for Thanksgiving, with 33⅓ r.p.m. record.....$10.00

Everywhere... Christmas tonight!

"CHRISTMAS AROUND THE WORLD"

• Full color • 8 year olds and up
• Sound • 40 frames

Based on Phillips Brooks' famous poem, "A Christmas Carol," this memorable new offering shows how Christmas is celebrated throughout the world and explains the origins of many of our Yule customs and traditions. Produced by Graded Press.

D850-19R Christmas Around the World, with 33⅓ r.p.m. L.P. record.....$10.00

Perennial favorites that belong in every filmstrip library

- **Why We Have Thanksgiving**
- **The Story of Thanksgiving**
- **The Little Pine Tree**
- **Rudolph— the Red-Nosed Reindeer**
- **Rudolph Shines Again**

These and dozens of other Holiday subjects are illustrated and described in the 1956 edition of SVE's

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Gentlemen: Please send, without obligation, free copy of SVE's booklet describing filmstrips for Holiday programs.

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DAGE TV AT WORK

HOW THE UNIVERSITY OF DETROIT USES CLOSED-CIRCUIT TELEVISION TO SOLVE A LECTURING PROBLEM

Dr. Rene Rochon, Dean of the Dental College of the University of Detroit, reports on the advantages of television in teaching dentistry: Under the old system in use at most schools, a few students and technicians crowded around the instructor and his patient, hampering demonstrations of dental techniques. Only those in the front row really saw what went on. At Detroit a Dage TV closed-circuit system lets the lecturer in his laboratory televise demonstrations to many students in a lecture room. Large groups see each operation, each instrument clearly.

This is only one of the many instructional applications of Dage closed-circuit television, the teaching tool that gives large classes a close-up look at hard-to-see information and operations. Learn what Dage can do to solve your specific problems. Write Dept. 1011.

Dage TV camera gives clear, close-up picture of a dental demonstration in laboratory . . .

. . . To this group of students seated in lecture room. Each student sees it all.

DAGE TELEVISION DIVISION
MICHIGAN CITY, INDIANA

In Canada, Dist. by Rogers Majestic Electronics, Ltd., Toronto. Outside North America, write C. O. Brandes, Inc., 4900 Euclid Avenue, Cleveland, Ohio.

Of People and Places

(Continued from page 183)

KENNETH L. BOWERS, formerly audio-visual director at West Chester (Pa.) State Teachers College, will be in Chile for two years as mass communications advisor to the Area Development Program centered at Chillàn. Referred to as "Plan Chillàn," this is a cooperative American-Chilean effort to improve the health, agricultural, and industrial aspects of life in the area.

ANN HYER, associate executive secretary of DAVI, represented the organization at the School for Executives conducted at Laramie, Wyo., August 18-24 under the sponsorship of the American Association of Colleges for Teacher Education.

ROY HINCH, director of audio-visual education for the Euclid (Ohio) public schools, has completed a second sound color film interpreting the schools of Euclid to people of the community.

ESTEMORE A. WOLFE of the Detroit public school system, who was a recent visitor to the national office, describes himself as an "auditorium teacher." He said he believed the institution was unique to Detroit. Literature, safety, dramatics, and other suitable subjects are taught in the auditorium to "oversized" classes of about 75 pupils with two teachers in charge. There is extensive use of audio-visual methods—films, filmstrips, opaque projector, radio programs. The classes are popular with children, and the position as teacher in charge, since it often leads to principalship, is a desirable one.

FRANCIS NOEL, who is currently working in Paris with the European Productivity Agency on a project involving the use of films and other audio-visual materials in industry training (6 rue Massenet, Paris 16) represented the United States at the recent conference of the International Council for Educational Films in Copenhagen.

CHARLES R. CRAKES, educational consultant for the DeVry Technical Institute, Chicago, has received the Distinguished Service Award of the Illinois Audio-Visual Association. The award was given to Mr. Crakes by the Association upon his return from a three-month speaking tour in Canada and California.

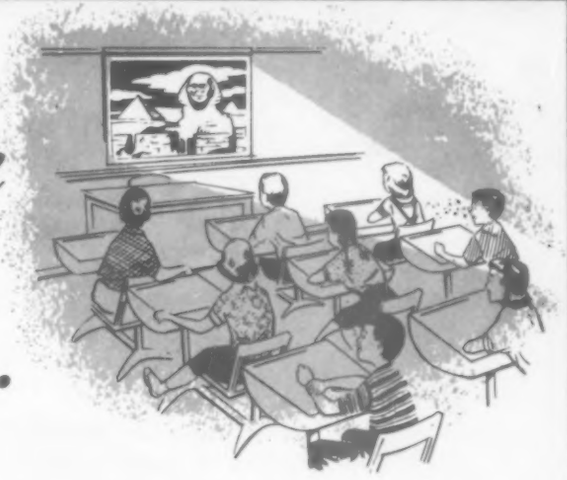
JOHN PAYNE is the new audio-visual director for Pueblo (Colo.) public schools and for Pueblo State College. John is taking the place of FRANKLIN OETTING, who is on a two-year leave of absence in order to carry on audio-visual work in Formosa.

JOHN SHAFFER, formerly director of audio-visual education for Appalachian State Teachers College, N. C., is the new director of the audio-visual program at Cortland State Teachers College, N. Y. John started his new position in September.

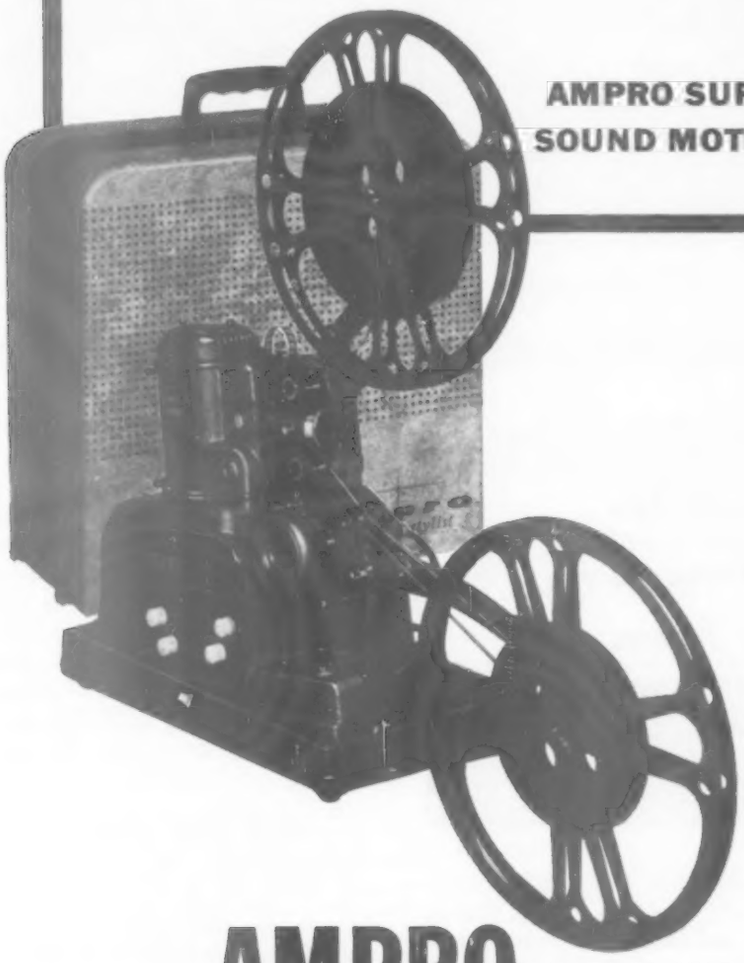
ERNEST SIEGEL, formerly audio-visual director, Fairlawn (N.J.) public schools, has assumed new duties as audio-visual director at Patterson (N.J.) State Teachers College.

ELTON AMBURN has accepted a position in the audio-visual department at New Mexico Western College. He was formerly at Southern State College, Magnolia, Ark.

Created for school use...



AMPRO SUPER STYLIST SERIES 16mm SOUND MOTION PICTURE PROJECTORS



Motion pictures projected by the superb Super Stylists have a "you-are-there" quality that stimulates thinking and learning. There is a model for every need, every size audience, every budget. Ampro's quarter-century-plus of specialization in the audio-visual field offers maximum assurance of smooth performance, long life, incomparable value.

Super Stylist-8
Combines low price with quality performance. 7.5-watt amplifier provides added volume for true-fidelity sound. 8-inch Alnico-5 permanent magnet speaker mounted in lift-off case cover. Up to 1000 watts illumination. Coated Super 2-inch F/1.6 lens.....$439.50

Super Stylist-10
To accommodate variable sized audiences. 10-watt amplifier and 10-inch Alnico-5 P.M. speaker.....$479.50

Super Stylist-12
Two-case design for largest audiences. 12-inch Alnico-5 speaker mounted in acoustically-balanced matched case.....$499.50

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TWO-SPEED TAPE RECORDER

Versatility unlimited! Tough, durable cabinet protects inset mechanism. Electro-Magnetic "Piano-Key" Controls; Automatic Selection Indicator and many other convenience features. 6" x 9" Alnico-5 P.M. speaker..$257.50

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TEACHING ESSENTIALS

for the all-important first steps in

LANGUAGE ARTS.....26 filmstrips

- Old Tales for Young Folks
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- Picture Stories for Reading Readiness — Series 1 and 2

SCIENCE.....25 filmstrips

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- Animal Stories
- Growing Things
- The Farmer's Animal Friends

SOCIAL STUDIES.....17 filmstrips

- Living and Working Together
- Our Neighborhood Helpers
- How the Indians Lived

all in true, full, beautiful Color

Plus 517 Other Filmstrips
—30,476 Quality Pictures —
in 15 Curriculum Areas

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UFPA Films Commended

Wilbert H. Pearson, chief of the Attestation and Review Staff of the U. S. Information Agency, delivered the keynote address at the Conference of University Film Producers Association, August 19-25 at the University of Mississippi.

Mr. Pearson showed excerpts of films made by university producers which had been used successfully abroad and urged his audience to continue their effective contributions.

O. S. Knudsen of Iowa State University succeeds Dr. Wagner as president of the organization. Others re-elected were Richard Polister, Purdue University, secretary; John Mahon. UCLA, and Don Cain, University of Minnesota. vice-president and treasurer respectively.

Texas Opportunity

Audio-Visual Aids Specialist opening with the Texas Forest Service at College Station. Position requires knowledge of still and movie photography, radio, and TV work. Starting salary $4500 per year, 10 working days vacation plus holidays. Address inquiries to the Texas Forest Service, College Station, Texas.

Hearing and Learning

(Continued from page 181)

address system is not needed at all, and the loudspeaker system should be designed strictly for audio-visual purposes. The loudspeakers should never be placed at the two sides of the stage as is so often done.

The loudspeaker system always belongs above the center of the proscenium opening and can consist of one or more units, depending on the size and coverage pattern required.

Ceilings Often Misused

If a large space in the school is to be used exclusively as an auditorium, its ceiling should almost always be finished in a hard, sound reflecting material. It should never be covered with sound absorbing material. Sound absorbing materials needed for reverberation control should be confined to rear wall surfaces and possibly to strips along the sides of the ceiling or other peripheral areas. The ceiling itself is very useful as a sound reflector, not only for direct live sources on the stage, but for all sorts of sound made in the room. This point is also widely misunderstood, and many auditoriums are still being built with sound absorbing treatment on the entire ceiling.

If we expect to be able to use audio-visual aids in all classrooms in the school. rather than in just one or two "audio-visual rooms," we must be sure that the rooms are well isolated from each other with complete partitions and closeable doors; and that they are reasonably well treated with sound absorbing materials to avoid excessive reverberance. We must locate the loudspeakers so that they can be heard by all the students when operated at reasonable sound levels and so that they do not drive the walls of adjoining rooms directly. We must finally resist the impulse to "turn up the volume control" to make the sounds louder than they need to be for comfortable listening.

PROPER room light is essential to useful communications, say psychologists. This means controlled illumination. The Pageant's Super-40 Shutter provides the *extra* light output needed to maintain contrast, prevent washed-out screen images when over-all illumination is increased.

"Take your message out of the dark!"

Why and how to show films in the "psychologically" right light

Did you know that a completely darkened room is *not* always the best setting for movies? You'll often find that the message gets across more effectively when individuals in your audience can observe reactions of the group.

The right light

Psychologists refer to this right light as a "comfortable level for group discussion." In actual value it is about one foot-candle. This is the minimum amount needed to read letters the size used in the sentence above that begins with "Why."

No problem

But what happens on the screen if you step room light up to the proper level? Will your movies look washed out, lack needed contrast and desirable detail?

Not if you show them with the NEW Kodascope Pageant Sound Projector, 16mm.

At sound speed, the Pageant's Super-40 Shutter *automatically* puts 40% more light on the screen than ordinary shutters. Even in a comfortably lit room you will get crisp tones, brilliant colors . . . all the details that help maintain interest and aid learning.

Other factors

The functionally brilliant pictures you will get are just one reason why a Pageant will help you to make movies both a pleasant and rewarding activity.

A nearby Kodak Audio-Visual Dealer will demonstrate at your convenience. Let him show you the many advances incorporated in this portable Pageant. See for yourself how a Pageant takes the "project" out of projection.

And compare these other important advantages that only the Pageant gives you.

1. Easy setups—Reel arms are already attached and fold into place. Spring-loaded snubbers and printed film path add to ease in threading. Single-switch reversing lets you run a few feet of film to check focus and sound, then reverse to opening frame.

2. Freedom from worry over maintenance and breakdown—Improper oiling has been pinpointed as the chief cause of projector difficulties. That's why a Pageant is *permanently* lubricated. It requires a minimum of maintenance, is ready for use when you want it.

3. Natural sound—Useful sound is a product of a number of factors. With a Pageant you get a complete sound *system*—baffled speaker, tone and volume controls, and an adjustable scanning beam for making the most of every sound track, regardless of position or condition.

Making a choice Choose from three different Pageant models. Get the one that meets your needs exactly. To help you make your decision on the basis of facts, send for this free booklet. It gives complete details on the unusually versatile Pageant.

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WANTED—

functional schools for modern education

Dr. Cross who writes the editorial this month is professor of education at New York University. Currently chairman of the DAVI Buildings and Equipment Committee, he has represented DAVI in this area on numerous occasions.

EDITORIAL—A. J. Foy Cross

LEARNING never has been just a matter of reading books. For a great many years, however, our schools concentrated their efforts on textbooks, library books, and supplementary reading materials for students.

With a constantly increasing knowledge of how people learn have come more effective and efficient instruction methods and a demand on the part of modern teachers for a vastly greater variety of instructional resources. From primary-school classes and the teaching of basic reading skills through college and in adult instruction programs of all types, teachers are relying on authentic visual and manipulative learning materials as essential to the proper use of the many word-centered media of our time.

To make this broad array of basic instructional materials as readily available to the teacher and student as books have been in the past, schools in many areas have established audio-visual instructional-materials centers.

Regardless of the way in which these centers are organized within a school, they can be only as good as the teachers who determine what resources go into them and who help learners make good use of them, and the director of the center who in turn helps the teacher.

New knowledge about how people learn and knowledge about what constitutes healthful study and learning environment has brought about new standards of an efficient classroom. Larger, quieter, better ventilated spaces, with abundant shadow-free and glare-free light and means for reducing room light to very low levels are characteristic of better new school houses. Likewise modern classroom standards call for a variety of equipment not found in the traditional classroom, as well as flexible adaptable furniture and fixtures and a generally pleasant attractive appearance.

In the United States, when we build a hospital, supermarket, or bank, we insist upon getting for our money the "last word" in functional design and equipment. We do not insist on getting the lowest cost building that might serve as a hospital, market, or bank. We know that while a good doctor has been known to save life by performing an emergency appendectomy with his patient on a kitchen table, such crude operating equipment and surroundings do not provide the best chance for the surgeon to practice his lifesaving art. We know that efficiency and attractiveness are essential to the buildings and equipment of a successful market or bank.

For some strange reason we frequently do not pay much attention to this principle when we build school buildings. We knowingly erect new school plants which are obsolete and inefficient by professional use standards with an eye to "saving money." Seldom do we reflect as we do when we build for business and industry that such "savings" may be most uneconomical.

Failing to provide for adequate floor space in the classrooms we build, neglecting adequate modern ventilation, failure to provide for proper light and light control, and failure to install adequate modern instructional equipment can "save" at most less than one percent of our total educational expenditure. Yet these failures and these "savings" can most surely reduce the effectiveness of the educational programs affected by them as much as 20 percent.

All this—new teaching techniques, new materials, new instructional materials centers, new buildings and equipment—constitutes a very real challenge to all professional school people and particularly to audio-visual specialists.

Do your students get the best guidance?

Today's students deserve the best possible guidance for the problems they face today and tomorrow. Your students deserve no less than the best help you, your teachers and counselors can give them, and no better assistance can be found than in Young America's guidance films... educational films made to the finest of standards, dealing with the guidance problems on which your teachers and thousands of others have asked help.

Young America's guidance films will help your students make better adjustments in school today. Such YAF films as **How to Take a Test** (1 reel, $50) and **How to Succeed in School** (1 reel, $50) help your teachers and counselors show students how to learn to make the most of school . . . how to get the most out of their school life.

No greater guidance problem faces you than that of helping your students plan their educational careers for the school years ahead of them — and for their life in the future. Expert counseling in this area is provided in such YAF films as **Why Study Home Economics . . . Why Study Industrial Arts . . . Why Study Science . . . Why Study Speech . . .** (each 1 reel, $50).

Many other excellent guidance films dealing with social guidance, personal problems, manners, life adjustment, and other topics, are now ready from Young America—all expertly designed to help you in your guidance program. All titles are described in the Films for Guidance section of the new YAF 1956-1957 catalog.

All YAF films are available for preview to prospective purchasers or can be rented at nominal rates from leading educational film libraries — free descriptive catalog and information on the nearest rental source will be sent upon request.

You can look to Young America for the best in teaching films and filmstrips.

Young America Films, Inc.
18 East 41st Street
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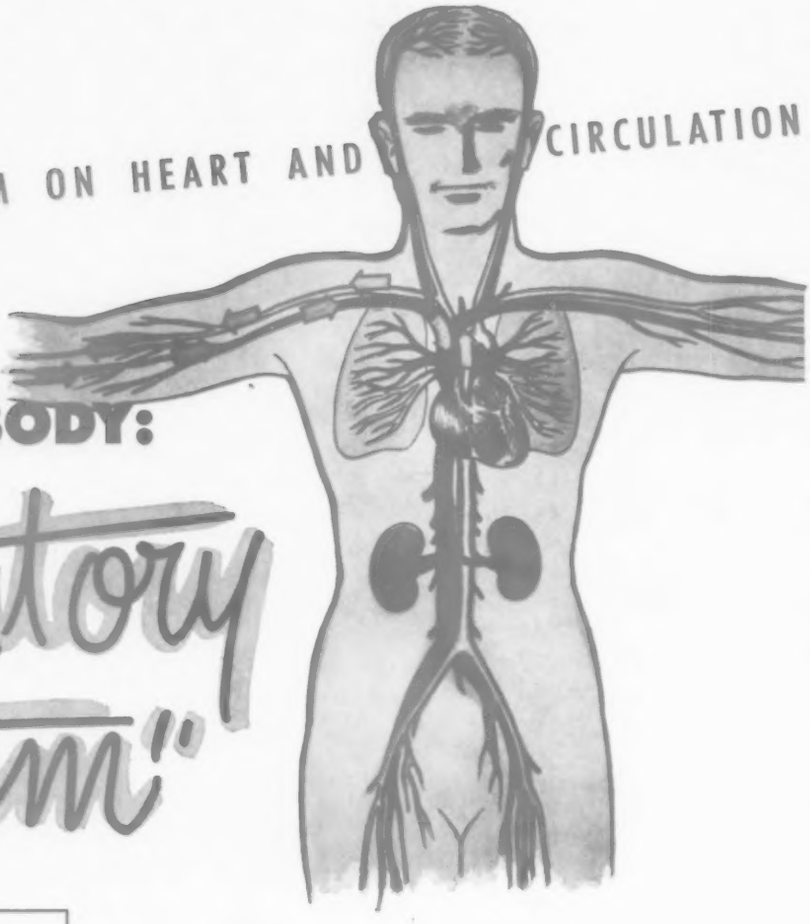
A NEW CORONET FILM ON HEART AND CIRCULATION



"THE HUMAN BODY: Circulatory System"

...a basic science film

Through the ingenious use of the latest film techniques (animation, cinefluorography, microphotography drawings, and close-ups of living organs) this new 16 mm. sound motion picture clarifies the working of the human circulatory system. It does this in a manner superior to anything as yet available as a teaching tool. In complete detail, the film shows the basic processes of the circulatory system; indicates the path and purpose of the blood flow; and demonstrates the function of the heart, lungs, and kidneys (with a visual analysis of each organ). When a significant term is introduced, it is overprinted on the drawing for emphasis. *The Human Body: Circulatory System* is designed for grades 10-12, but valuable use may be made of it in both junior high school and college.

While the film is available in both color and black-and-white, the color version provides by far the clearest rendition of the basic elements and processes under study.

The educational collaborator for the film is George K. Fenn, M.D., professor of Medicine, Northwestern University Medical School. The film is 1¼ reels in length (running time 13½ minutes).

Other new films just released (each one reel) include:

Careers in the Building Trades (Basic Skills) (Grades 7-12) • His summer job on construction convinces Bob that he wants to work in the building trades. He finds, on returning to school, that each of his subjects helps to prepare him for his future work.

The Story of Citrus Fruits (Grades 3-6) • A complete survey of the cultivation and processing of citrus fruits, from the growth of seedlings to canning and freezing at the packing plants.

Understanding Fire (Exploring Science) (Grades 1-6) • Billy finds that the more control we have over fire, the more useful it can be. Remembering certain school experiments, he begins to understand fire's three requirements.

Let's Measure: Ounces, Pounds and Tons (Grades 1-3) • Tommy finds how we build up a pound by adding ounces, how we use measurements of weight, and how to estimate the weight of common articles.

Let's Measure: Pints, Quarts, and Gallons (Grades 1-3) • Ricky discovers numerical relationships among the standard measures and learns that the shape of the measure does not affect the amount it will hold.

Write for Preview ... If you are seriously considering purchase, fill in coupon for a preview of this Coronet film; or for a list of Coronet Film Libraries if you are interested in rental.

Coronet Films

CORONET FILMS
Department IM-106
Coronet Building,
Chicago 1, Illinois

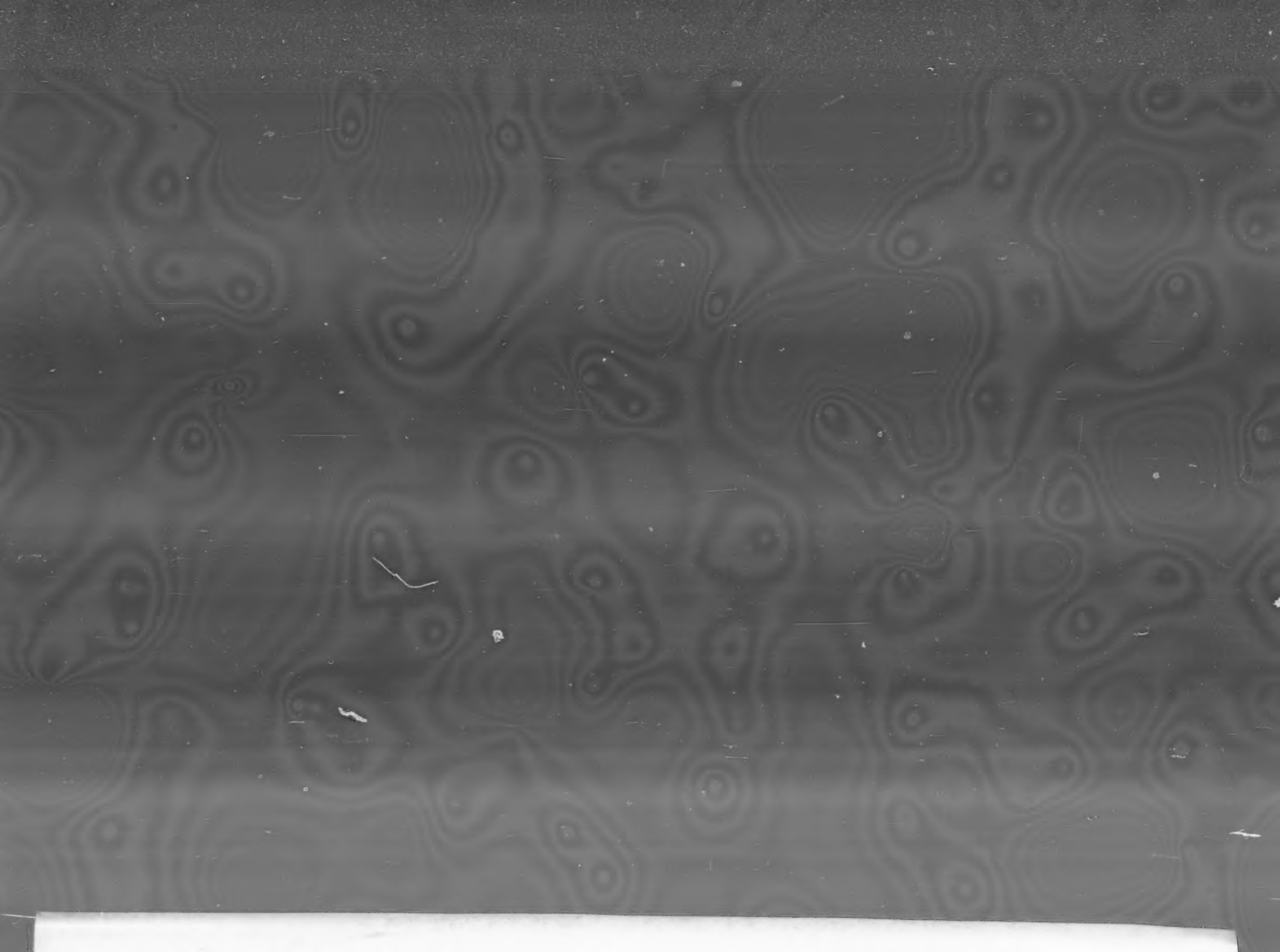
☐ Check here if you wish latest complete list of Coronet films, including descriptions of all films listed above.

☐ Please send me without charge a preview print of "The Human Body; Circulatory System." If approved, we can seriously consider purchase of this film.

☐ I am interested in renting this film. Please send me a list of Coronet Film Libraries.

Name_____

School or Organization_____

Address_____

City_____ Zone____ State_____